StellarMark IF-Series
User Manual

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Table of Contents

CHAPTER 1 SAFETY 4

1.1 Principles of a Fiber Laser 5
1.2 Safety Ratings 5
1.3 The Safety Interlock System 5
1.4 Safety Labels 6
1.5 Safety Measures 10
1.6 Operating Environment 11

CHAPTER 2 UNPACKING & CONTENT 12

2.1 Unpacking and Unloading 13
2.2 Accessories Checklist 14

CHAPTER 3 MECHANICAL OVERVIEW 17

3.1 Laser Marker 18
3.1.1 LED Panel 19
3.1.2 Scan Lens 20
3.2 Control Unit 21
3.2.1 Optical fiber 22
3.2.2 I/O Terminal Connector 22
3.2.3 Rotary Attachment connector 23
3.2.4 USB connector 23
3.2.5 Mark On Fly terminal connector 23
3.3 Foot Print 24
3.3.1 Laser Marker Foot Print 24
3.3.2 Control Unit Foot Print 25

CHAPTER 4 WORKING DISTANCE 26

4.1 Recommended Working Distance 27
4.2 Pyramid Focus Tool 28

CHAPTER 5 MACHINE SETUP 30

5.1 Cable connection 31
5.2 Powering Up the Machine 33
5.3 Control Unit operating instruction 35

CHAPTER 6 SOFTWARE SETUP 37

6.1 Recommended Computer Configuration 38
6.2 Software Installation for Windows System 38
6.3 Software Installation for MAC System 47
6.4 Waveform Parameter Adjustment 55

CHAPTER 7 LENS ADJUSTMENT 56

7.1 Import Lens Parameter 57
7.2 Lens Parameter Card 61
7.3 Lens Parameter Adjustment 64

CHAPTER 8 ERROR MESSAGE 68

CHAPTER 9 EXTERNAL CONTROL 70

9.1 I/O Pin Assignment 71
9.2 Laser Working Flow Chart 74
9.3 Laser Reaction Timing Diagram 75
Start → Fire delaying time 75
Laser signal Output → External device delaying time 76
Laser signal Output → External device delaying time 76

CHAPTER 10 BASIC MAINTANENCE 77

10.1 Regular spot check 78
10.2 Cleaning the scan lens 78

Chapter 1

Safety

Principles of a Fiber Laser
Safety Ratings
The Safety Interlock System
Safety Labels
Safety Measures
Operating Environment

1.1 Principles of a Fiber Laser

LASER is the acronym for Light Amplification by Stimulated Emission of Radiation.

IF-series is equipped with the state-of-art fiber laser technology.

A fiber laser is built with “all fiber” technology and uses a telecom grade diode to pump an optical fiber, and the fiber is doped with rare-earth elements as a gain medium to generate 1064nm laser light.

Compared to the conventional DPSS technology, fiber laser is immune of misalignment and does not request any adjustment during operation.

1.2 Safety Ratings

Laser marking systems that have the CDRH safety rating of Class 4 and the StellarMark IF-series has been equipped with a red guidance pointer. This red dot allows the operator to safely see the focal point of the laser beam.

It gives Stellar Mark IF-series a rating of 3R when it is integrated with a safety door while operation.

1.3 The Safety Interlock System

With the optional item of safety shield, it gives the StellarMark IF-series marking systems the capability to automatically shut off the laser when the door is opened. There are some magnets on the side of safety door, which activate this safety mechanism. Do not attempt to remove or modify these magnets or any other component of the safety interlock system.

WARNING

- DO NOT operate the laser system if any component of the safety system is malfunctioning.
- DO NOT attempt to remove or modify any component of the safety interlock system.

1.4 Safety Labels

According to CDRH standards, all fixed or removable covers that allow access to a laser beam must have appropriate laser warning labels attached to them. These warning labels must be clearly visible to the operator prior to removing the cover. Additional labels must be applied to the interior of the machine and be visible in the event when the covers are removed.

A label clearly displaying the manufacturer's name, date of manufacture, description of product, model number, serial number, and compliance statement must be attached to the outer surface of the machine.

In compliance with CDRH standards, the required warning labels are affixed at the time of manufacture to the StellarMark IF-series, attached on appropriate locations. These labels are not to be modified in any way or removed for any reason. Please familiarize yourself with the specific labels and their locations on the machine. Below is a list of all the safety labels and their locations on the machine.

Product Label

This label is located at the side panel of machine. All the product information such as Serial Number, Model Numbers, Laser Power and Electric power can be found here. Before requiring any further tech support, always provide the service person with the information on this label.

Serial Number
I50357

Manufacturer	GCC www.GCCworld.com
Product	Laser Marking System
Model	StellarMark
Model Number	IF 20LRM 070
Wavelength	1064 nm
Peak Power	Up to 12 KW
Manufactured	May 2012
Input	110~220V, Max 15A

Class 4 Laser Product
This product complies with EN60950-1:2002+A11:2004
Made in Taiwan
4F., No.236, Fude 2nd Rd., Xizhi Dist.,
New Taipei City 22151, Taiwan

Serial Number
I50357

Manufacturer	GCC www.GCCworld.com
Product	Laser Marking System
Model	StellarMark
Model Number	IF 20LRM 110
Wavelength	1064 nm
Peak Power	Up to 12 KW
Manufactured	May 2012
Input	110~220V, Max 15A

Class 4 Laser Product
This product complies with EN60950-1:2002+A11:2004
Made in Taiwan
4F., No.236, Fude 2nd Rd., Xizhi Dist.,
New Taipei City 22151, Taiwan

Serial Number
I50357

Manufacturer	GCC www.GCCworld.com
Product	Laser Marking System
Model	StellarMark
Model Number	IF 20SHS 070
Wavelength	1064 nm
Peak Power	Up to 12 KW
Manufactured	May 2012
Input	110~220V, Max 15A

Class 4 Laser Product
This product complies with EN60950-1:2002+A11:2004
Made in Taiwan
4F., No.236, Fude 2nd Rd., Xizhi Dist.,
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Class 4 Laser Product
This product complies with EN60950-1:2002+A11:2004
Made in Taiwan
4F., No.236, Fude 2nd Rd., Xizhi Dist.,
New Taipei City 22151, Taiwan

CDRH Label

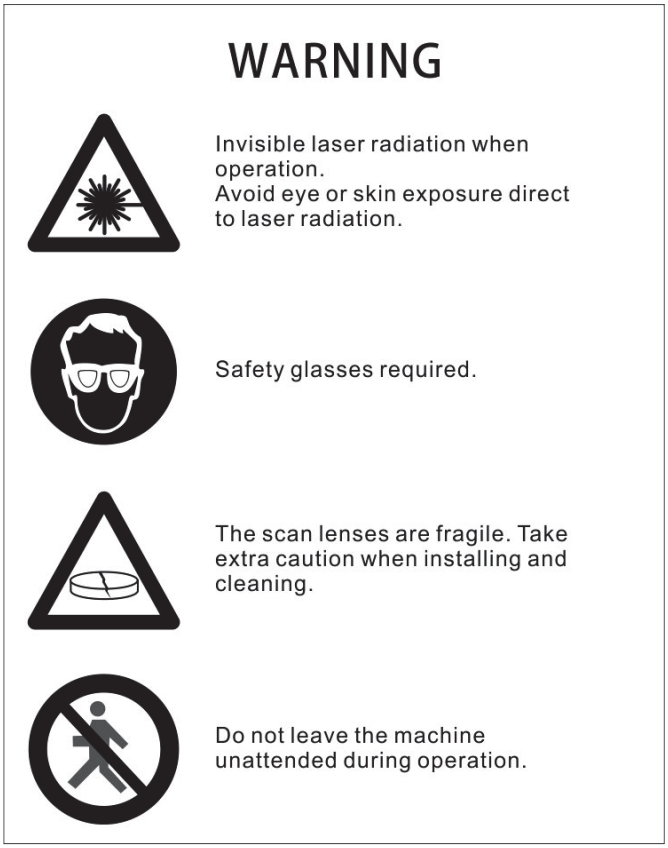
This label indicates the class level of CDRH.

CE Label

This label indicates the class level of CE

Warning Label

Warning Label is written with all the necessary information to be aware of in every operation.


WARNING
Invisible laser radiation when operation.
Avoid eye or skin exposure direct to laser radiation.
Safety glasses required.
The scan lenses are fragile. Take extra caution when installing and cleaning.
Do not leave the machine unattended during operation.

Emergency Stop Label

This label indicates the emergency stop button. You can find this label on the right upper side of the machine.

1.5 Safety Measures

- **LASER RADIATION WARNING:** Exposure to laser radiation may result in physical burns and severe eye damage. Proper use and regular maintenance of this machine is important to the safety of all people in the immediate area.
- Prior to operation, carefully read and familiarize yourself with the warning labels located on both your laser system and in this manual.
- Never leave the machine unattended during the laser cutting and marking process. The laser may ignite combustible materials. A well-maintained fire extinguisher and operational smoke or fire detector should be kept in the vicinity of the machine.
- Always wear safety goggles when the laser system is in operation. Reflective materials such as mirrors, enameled brass and anodized aluminum may partially-reflect some of the invisible laser radiation. Severe eye damage may occur if appropriate safety goggles are not worn.

NOTE

IF-series laser machine is shipped with a single pair of safety goggles. If additional safety goggles are required, please contact GCC directly or an authorized GCC distributor. If you wish to purchase one on your own, please make sure the safety goggles meet these requirements:

190 - 534 nm OD5+

910 - 1,070nm OD6+

Visible Light Transmission: 23.5%

- Connect the machine to a properly grounded power outlet. Ensure the voltage of the power source is identical to the voltage of the machine.
- Do not attempt to modify or disassemble the laser module.
- Do not attempt to remove or modify any component of the machine's laser interlock safety system.
- Ensure the immediate work area of the machine is well-ventilated. Odors, vapors, and dust are byproducts generated during the laser marking and cutting process. An exhaust system is recommended. Please contact GCC or your local GCC distributor for more information.

- Do not laser heat-sensitive surfaces or materials that may generate toxic fumes, such as PVC and Teflon.
- Regularly clean and maintain your machine according to our cleaning and maintenance instructions. Doing so will ensure a machine that will operate effectively and safely over a long period of time.

1.6 Operating Environment

Please follow the guidelines when considering a suitable location to set the LaserPro StellarMark IF-series. Improper work environments may lead to operational malfunction and/or unsafe working conditions. The LaserPro StellarMark IF-series should be placed and operated in a clean environment, avoid places where the machine is exposed to high temperatures, dust, or high humidity

- Keep the machine where the room temperature is between **15 – 35 degrees Celsius** or **59 – 95 degrees Fahrenheit**.
- Avoid small, enclosed areas where a considerable amount of dust is present.
- Avoid areas where the humidity is above 70% or where the temperature is near the dew point.
- Setup the machine to be apart from the wall for at least 40cm (1.5 feet).
- Choose a flat surface that is not exposed to high levels of vibration.
- Be sure that your mounting platform has been securely fastened to the table, stand, or floor.
- Choose a location that is large enough to accommodate the machine, the computer and a work/storage table.
- Have a fire extinguisher close to the working location at all times.
- Make sure your smoke/fire detecting system is functioning.

Chapter 2

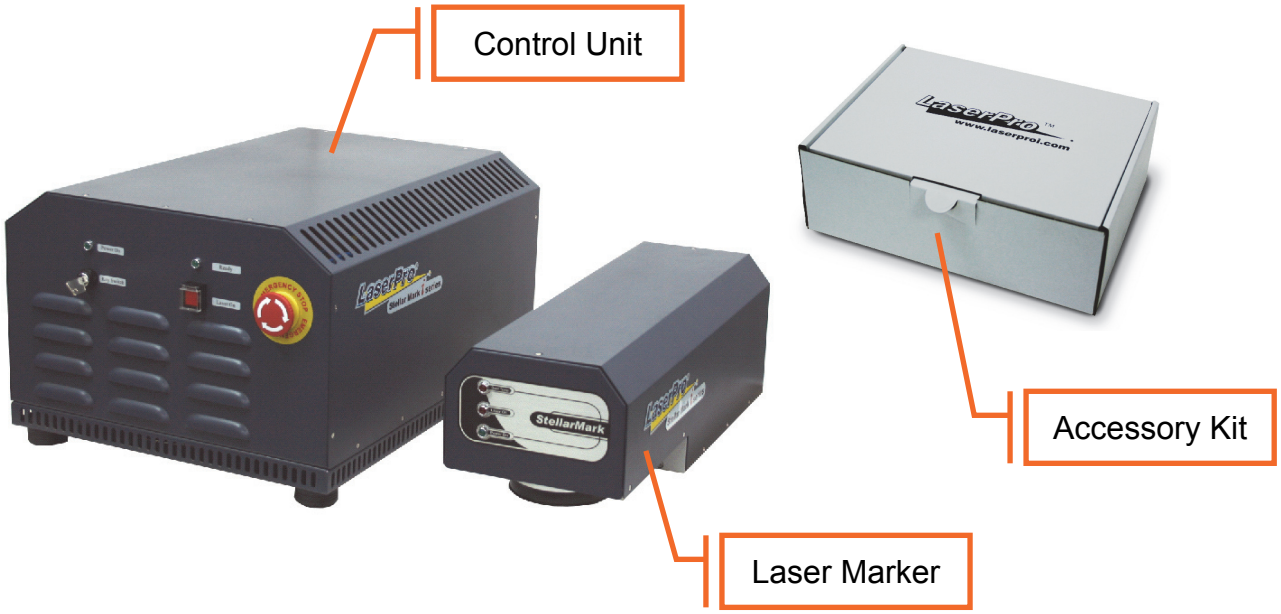
Unpacking & Content

Unpacking and Unloading

Accessories Checklist

2.1 Unpacking and Unloading

The Stellar Mark IF-series is shipped in one crate that contains one laser marker, one Control Unit, the software and all of the necessary accessories in an accessory kit.



WARNING

To prevent damage to the machine or personal injury, please get assistance when loading and unloading the shipping crate.

NOTE

Please save the original shipping crate in case it is needed for future transport or product servicing.

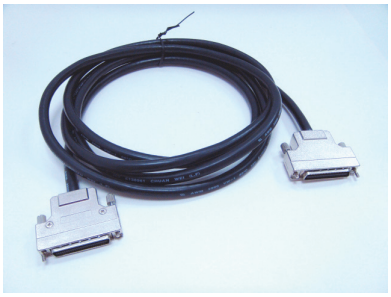
2.2 Accessories Checklist

Before use, please check to see that the following items are shipped together correctly in the accessory kit.

Item	Quantity	Check
SCSI Cable 50pin length 2.5m	1	
System Key	1	
Laser Marker Power Cable (48V/20A/7Pin 2.5m)	1	
G-Mark LibrarySoftware CD set	1	
User's Manual CD set	1	
USB CABLE	1	
AC Power Cable(Europe)	1	
Power Cable (US)	1	
Power Cable (AUS)	1	
Pyramid Ruler Focus Tool	1	

Software Keypro for G-Mark Advance	1	
Lens Cleaner	1	
Lens Cleaning Paper	1	
Cotton Bud (100pcs/ pack)	1	
1064nm Goggle	1	
Lens parameter Card	3	
M6 screw plastic foot	4	
Nut (M6xt5xS10).	4	
I/O Terminal Platform(5ESDVM-10P)	1	
I/O Terminal Cable 25 pin	1	
Hex head screws driver	1	
Warranty Card	1	

Photos of key items:



SCSI Cable

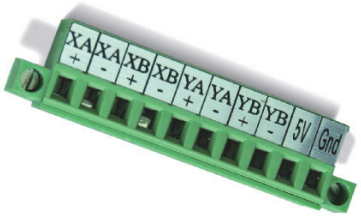
System Key

Laser Marker Power Cable

G-Mark LibraryCD Set

User's Manual CD Set

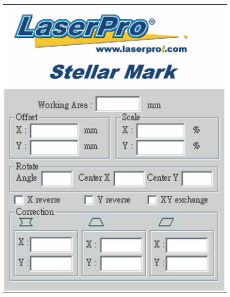
USB Cable



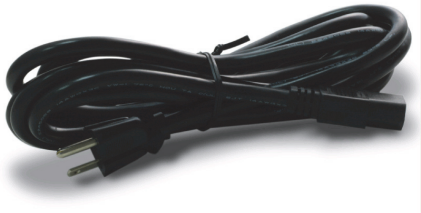
I/O Terminal Connector

Pyramid Focus Tool

Software Keypro



Lens Parameter Card



AC Power Cable

Goggle

I/O Terminal Cable

Chapter 3

Mechanical Overview

Laser Marker

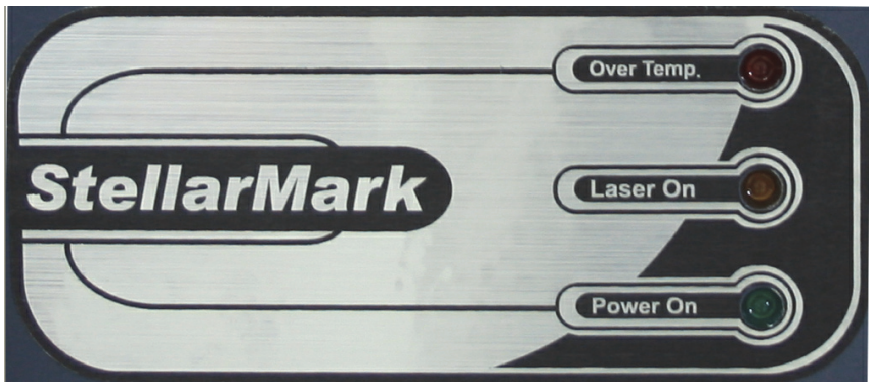
Control Unit

Foot Print

Before you complete the installation, it is a good idea to become more familiar with the machine's features and components. You should also make note of the new features that have been developed exclusively for the Stellar Mark.

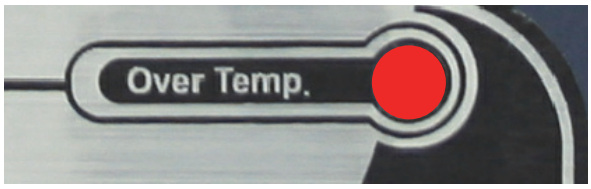
3.1 Laser Marker

3.1.1 LED Panel



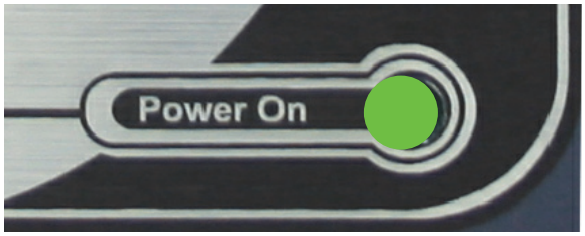
There are 3 LED lights on the panel and they will indicate out three working status of “Over Temp”, “Laser On” and “Power on” of the laser marker.

- Over Temp:
  When the red LED light is on, the laser marker will stop firing. Please turn off the master power of the laser marker and re-start it when the operating temperature is dropped below 35℃.



- Laser On:
  When laser is firing, the red LED light is on.

- Power On:
  When the laser is power on and the green LED light is on.



3.1.2 Scan Lens

The StellarMark™ IF-series gives you the choice of 3 sizes of scan lens to best suit your marking applications.

IF-20 070	IF-20 110	IF-20 180
70x70mm	110x110mm	180x180mm

IF-40 070	IF-40 110	IF-40 180
70x70mm	110x110mm	180x180mm

- The smaller field size scan lens will produce a smaller spot size with higher marking resolution.
- The larger field scan lens will produce a larger spot size with lower marking resolution.

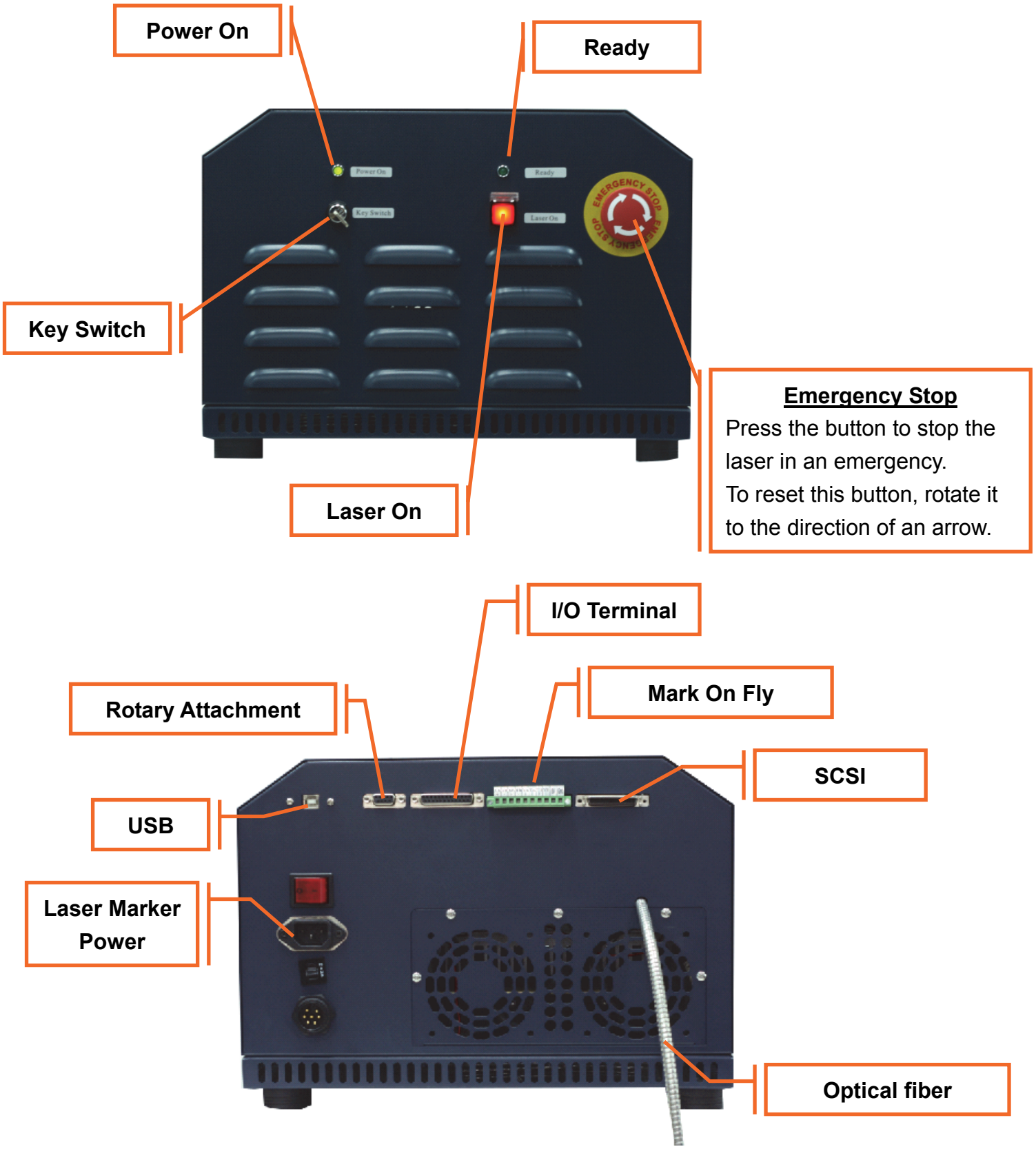
WARNING

The scan lens is very fragile and must be careful while the cleaning and installing.
Defective or unworkable scan lens due to abuse, mishandling, misuse, accident, alteration, negligence, improper installation, deficient cleaning or other causes will not be covered in the warranty.

NOTE

Scan lens is protected by a cover to prevent damage during shipment. Always remove the cover prior to use.

3.2 Control Unit



3.2.1 Optical fiber

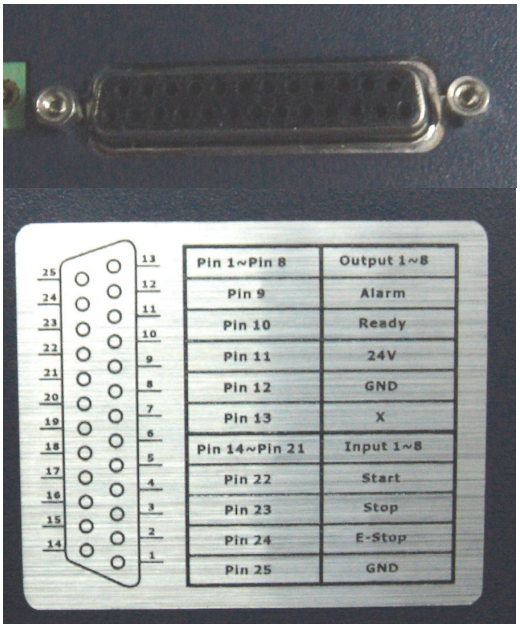
Optical fiber is doped with rare-earth elements as a gain medium to generate 1064nm laser light.

⚠ WARNING

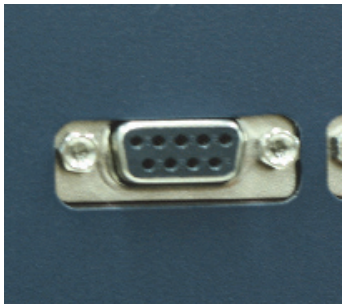
- Excessively tight fiber bends (less than a 10 cm radius) will permanently damage and possibly ignite the fiber.
- Do not remove the two ends of fiber cable from the fiber module.

3.2.2 I/O Terminal Connector

The I/O pins are located at the back of Control Unit and they are the signal transmitting bridges between StellarMark and automation devices such as the conveyer for automation controls. 8 Output signal pins and 8 Input signal pins are provided for any designated automation purposes.
It will allow laser marker to receive signals **from** or **send out** the signal to the other automation devices.



3.2.3 Rotary Attachment connector



It is a connector which connects to GCC provided optional item of Rotary Attachment,
It allows for precise 360° marking on round, cylindrical, or torus-shaped objects.

3.2.4 USB connector

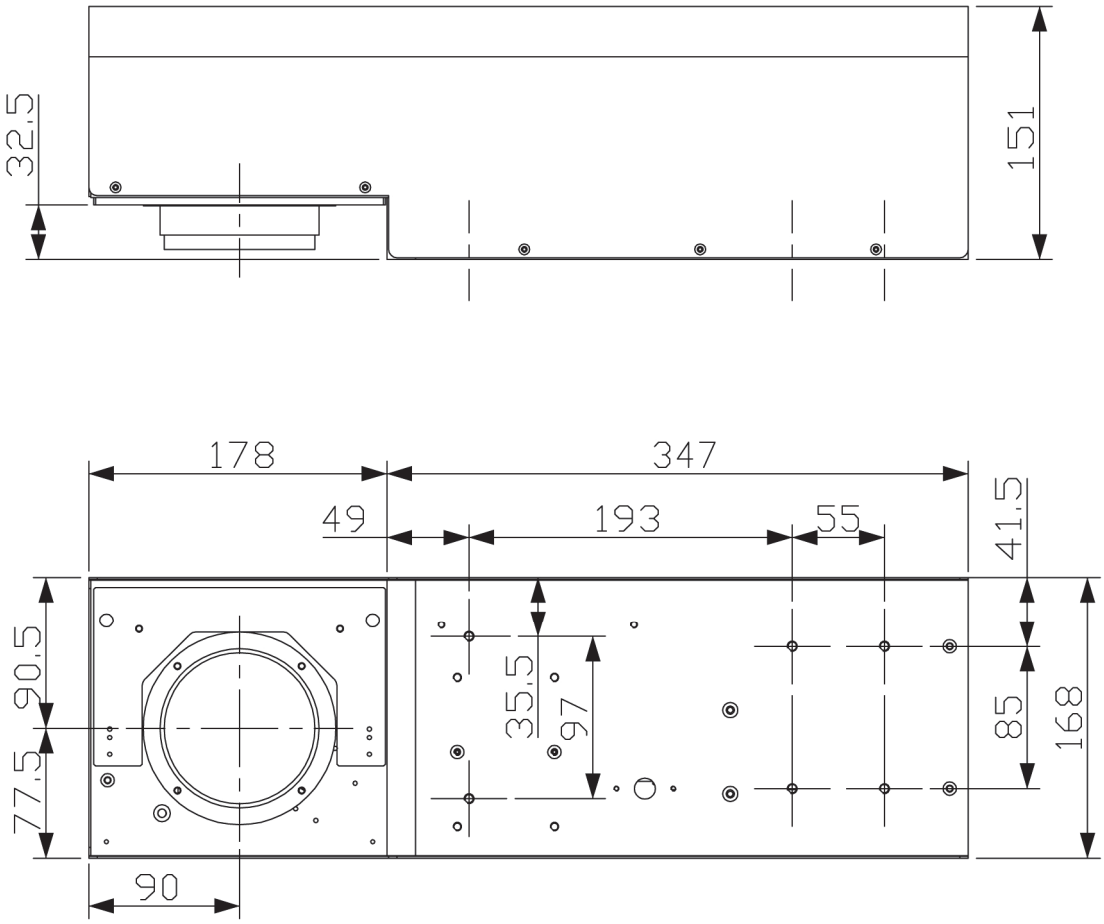
It is a connector which connects to a desktop PC or Notebook.

3.2.5 Mark On Fly terminal connector

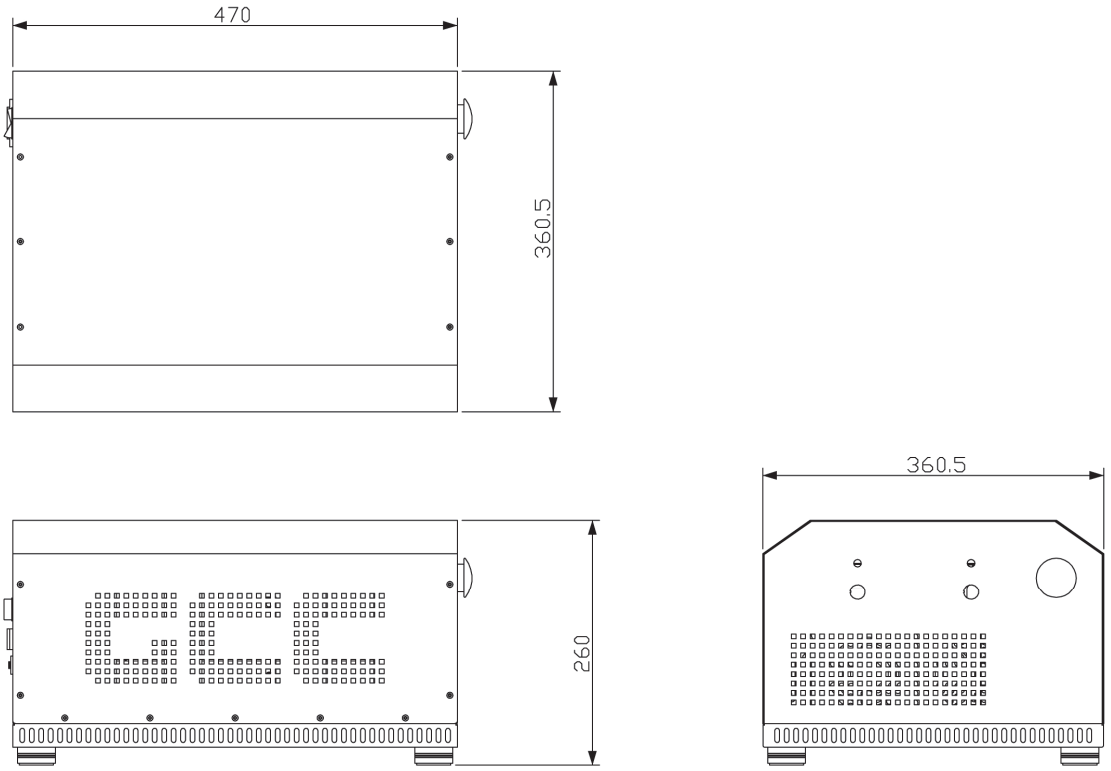
It is a connector which connects to an external device like encoder of conveyor.
It allows Non-stop, “on-the-fly” marking parts maximizes productivities.

3.3 Foot Print

3.3.1 Laser Marker Foot Print



3.3.2 Control Unit Foot Print



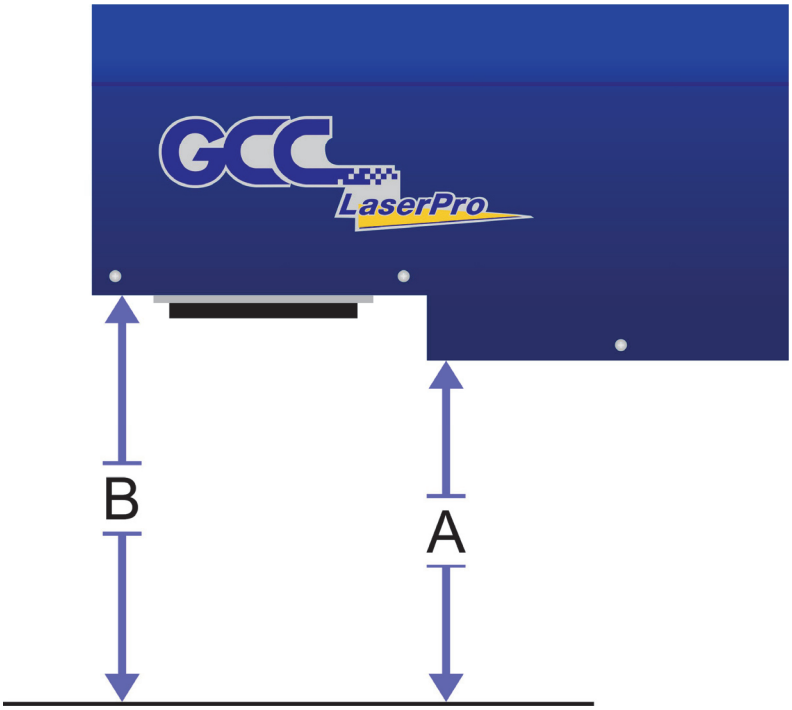
Chapter 4
Working Distance

Recommended Working Distance

Pyramid Focus Tool

4.1 Recommended Working Distance

Due to the characteristics of the scan lens, a certain distance between the marking object and scan lens has to be set for an optimized output quality. The working distances for different scan lens are recommended as below:



Scan lens	70x70mm	110x110mm	180x180mm
A (Focus distance from bottom of the machine)	91.3mm ± 1mm	169.8 ± 2mm	313.3 ± 2mm
B (Focus Tool Length)	128.3 ± 1mm	206.8 ± 2mm	350.3 ± 2mm

NOTE

In order to achieve the best output quality, the working distance must set precisely as recommended.

For instance the 70x70 mm scan lens can only tolerate a distance which is +- 1mm different from the recommended working distance of 91.3mm.

If the working distance is set and out of the recommended range, the output work produced will be unsatisfactory.

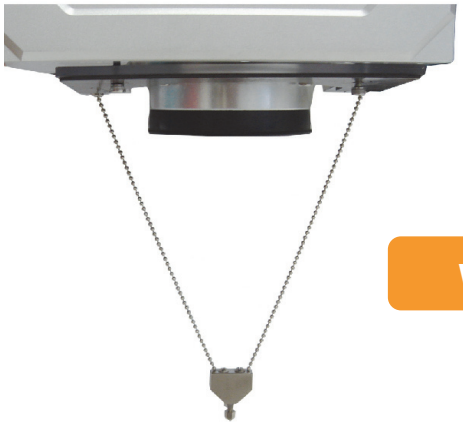
4.2 Pyramid Focus Tool

The innovative and patened focus tool is an accessory unit for providing the best working distance on StellarMark IF-series.
You will find the focus tool is located in accessory kit and an optimized length is set for your scan lens size when the machine is shipped.

NOTE

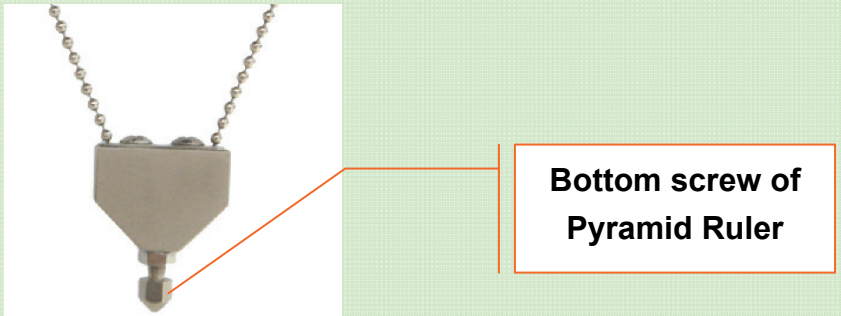
Fixed length will be varied depend on the size of scan lens.
The fixed length of Pyramid Ruler equals the recommended working distance and you will no need to adjust the length.

Screw the Pyramid Ruler beneath the laser marker and let the to be marked material touches the bottom screw of Pyramid Ruler, the distance between the two is the best working distance.



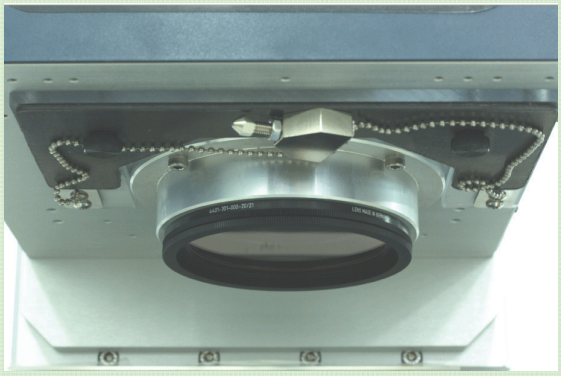
NOTE 1.

With this tool, you can always have the best working distance for different materials by just place your desired marking material on the z axis table and move the z axis table up until the mark material touches the bottom screw of Pyramid Ruler.



NOTE 2.

With its magnetic design, the “Pyramid Ruler” can easily be placed underneath the head of laser marker.



Chapter 5

Machine Setup

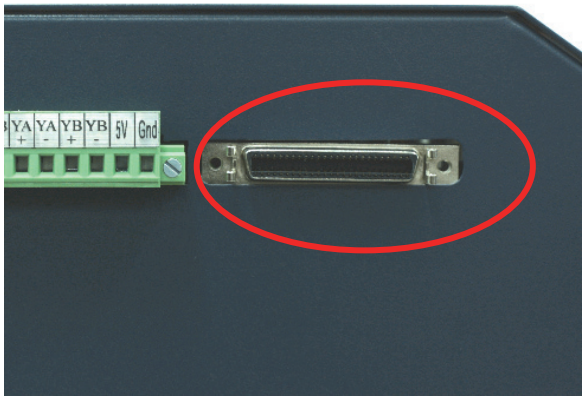
Cable Connection

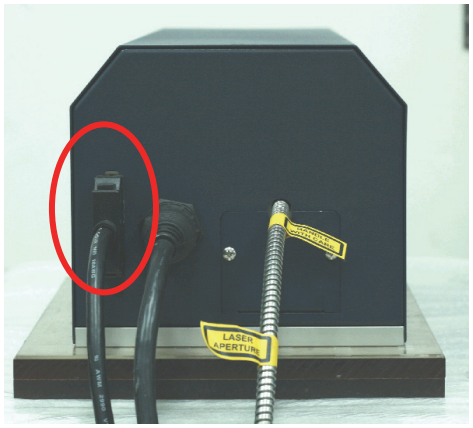
Powering Up the Machine

5.1 Cable connection

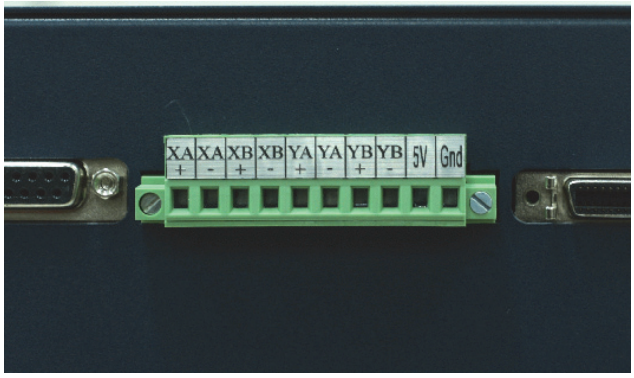
Step 1. Connect the USB cable between a PC or Laptop and the Control Unit.

Step 2. Connect the SCSI cable between the Control Unit and laser marker

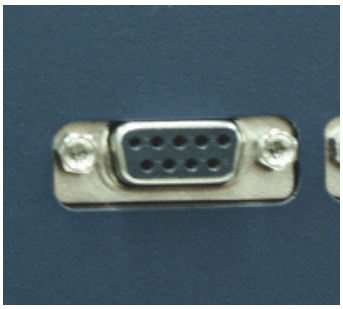




Step 3. Take out the “Mark on Fly” terminal connector from accessory kit and plug it if you want to activate the “mark on fly” function with an external device like conveyor.

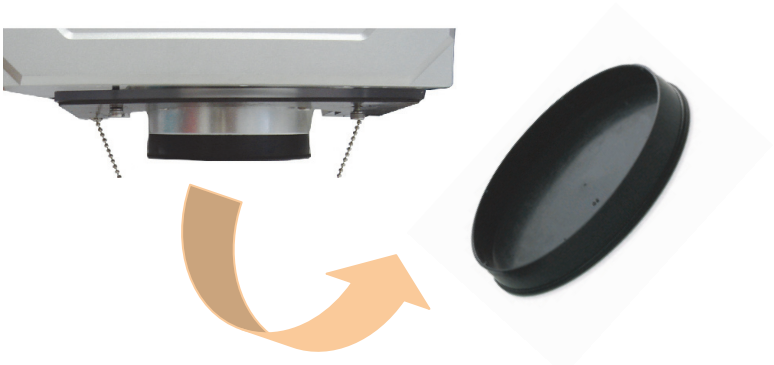


Step 4. Plug the “rotary attachment” cable between Control Unit and the rotary attachment if you have this optional item in hand.

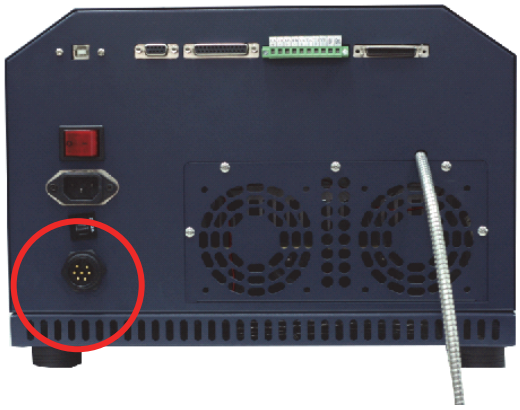


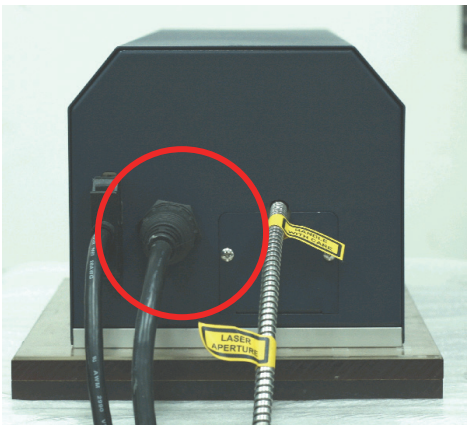
Step 5. Plug the software keypro to a USB connector of you PC or Laptop.

Step 6. Remove the cover of scan lens which is shipped along with StellarMark for protection.
Take care not to damage the lens after removing the cover.



Step 7. Connect the Laser Marker power cable between the Control Unit and the laser marker..





5.2 Powering Up the Machine

CAUTION

Make sure both StellarMark IF-series and the computer is turned off before connecting either to a power source.

Step 1. Connect the male end of the power cord to a quality surge protector and the connect the surge protector to a proerly grounded outlet.

Step 2. Do the same for the computer system

Step 3. Connect the female end of the power cord into the machine's power cable inlet located on the Control Unit.

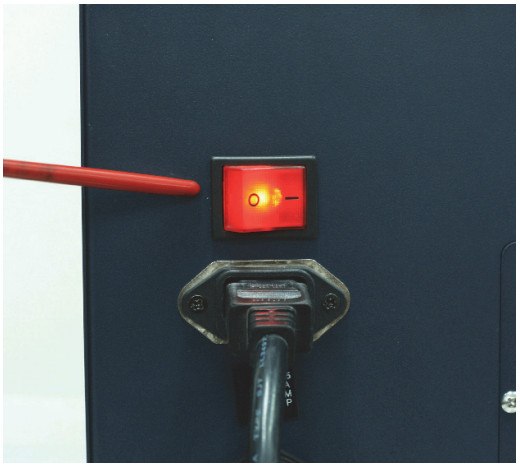
NOTE

The Stellar Mark IF-series as been designed to work with 110~220 VAC, 50/60Hz, Max 5A

WARNING

The connection to the AC power source must be the last step.
Do not pull in or out the cable while the power is being turned on.

Step 4. Turn on the master power of the Control Unit.



NOTE

Every time you turn off the power of laser marker, you are required to re-start G-Mark Library marking software.
Because the connection between computer and control box is disconnected when the power is off, so the marking software is unable to control the laser firing.

Step 5. Make sure the green light of “Power On” is on.

5.3 Control Unit operating instruction

Step 1. Once the master power is on, please wait for **10 min** to warm up the laser. This purpose is to ensure the laser power is reached to a stable firing status.

Step 2. Make sure “Power On” LED is on

Step 3. Turn the key switch on so you will be able to fire the laser OFF (Left) / ON (right)

Step 4. Press ” LASER ON” button. The indicator light will alternately turn on and ready to lasing.

NOTE

- After finishing marking, press the LASER ON button again to off laser output.
- Please turn the key switch to the “Off” position if you would like to turn off the machine.

Chapter 6

Software Setup

Recommended Computer Configuration

Software Installation for Windows System

Software Installation for MAC System

Waveform Parameter Adjustment

6.1 Recommended Computer Configuration

The Stellar Mark is able to accommodate Laptop and compatible PC operating systems. Both the machine and G-Mark Basic ™ software were designed to work best using a Windows based system with the following minimum requirements.

Computer Configuration

- CPU Intel Pentium, 1GHz or above
- DRAM 1GB RAM or above
- CDROM One CD-ROM disk drive
- HDD 500 MB of free hard drive space
- SVGA Super VGA display (1204 x 768 min. resolution)
- Interface PC or Laptop

G-Mark Library marking software

- **Software is designed for operating system**
  - Windows XP SP3
  - Windows 2000
  - VISTA 32 bit
  - Windows 7 32 bit

6.2 Software Installation for Windows System

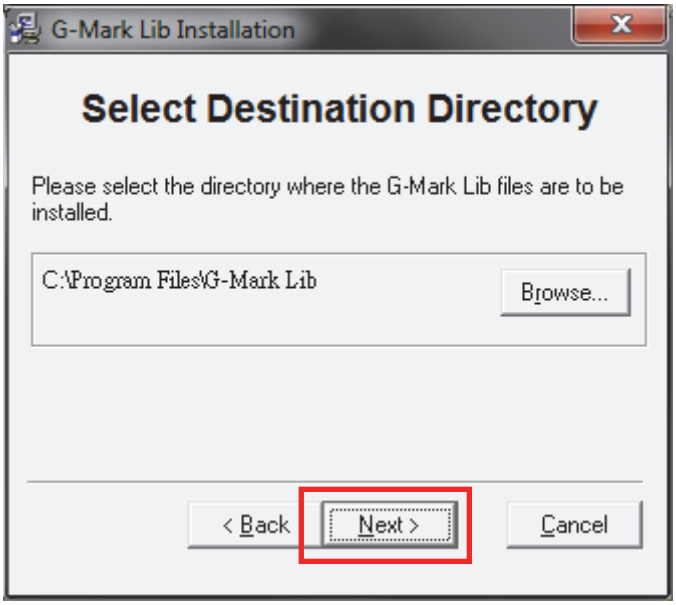
Please perform the following steps:

Step 1. Take out the G-Mark installation CD from the accessories kit

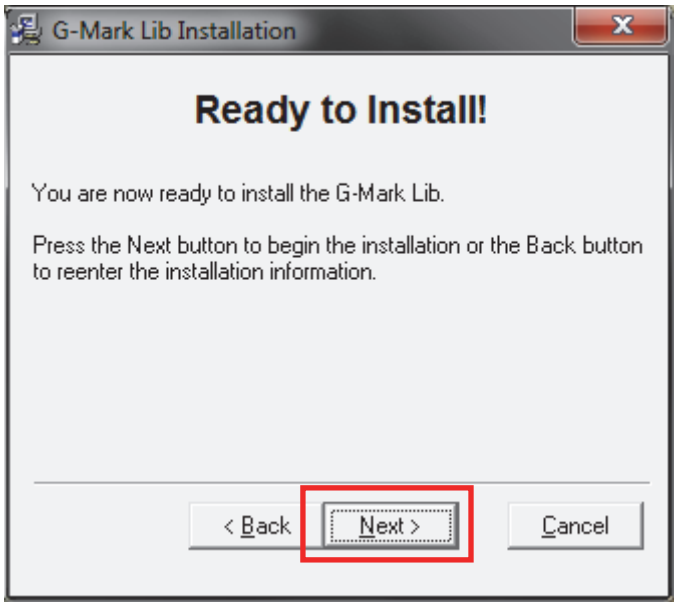
Step 2 Insert the G-Mark installation CD into the CD-ROM drive
Wait a few seconds for the CD Manager to begin the Setup automatically

Step 3. Click on 32 bit or 64 bit version from the menu of the G-Mark installation CD depending on your operating system

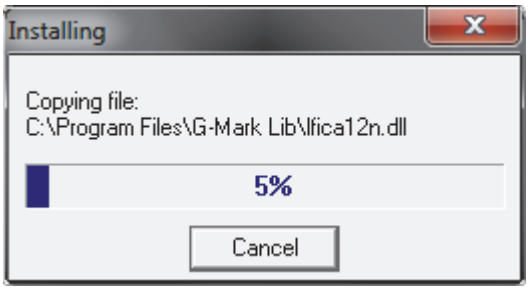
Step 4. Set the destination directory and click "Next>"


G-Mark Lib Installation
Select Destination Directory
Please select the directory where the G-Mark Lib files are to be installed.
C:\Program Files\G-Mark Lib
Browse...
< Back
Next >
Cancel

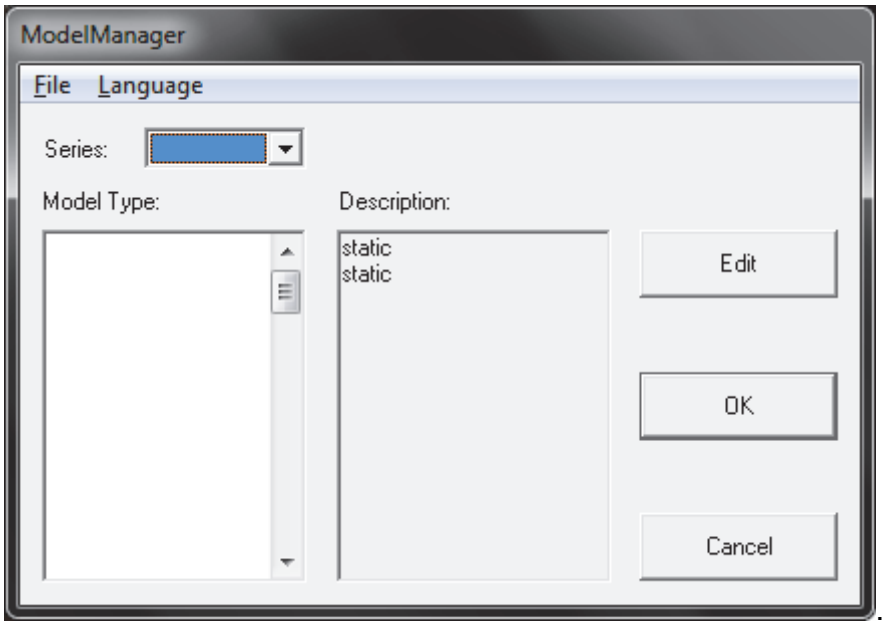
Step 5. Select "Next>"


G-Mark Lib Installation
Ready to Install!
You are now ready to install the G-Mark Lib.
Press the Next button to begin the installation or the Back button to reenter the installation information.
< Back
Next >
Cancel

Step 6. Installing

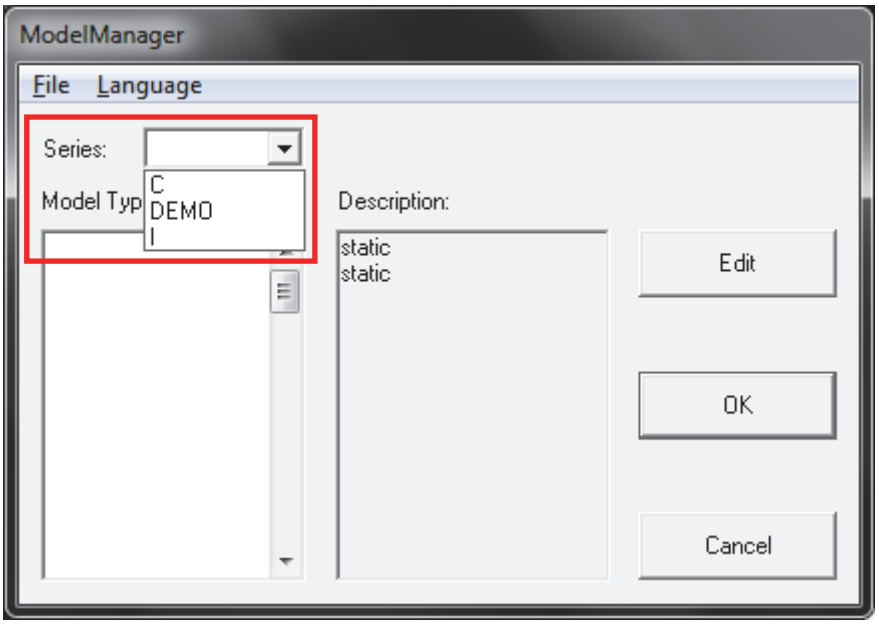


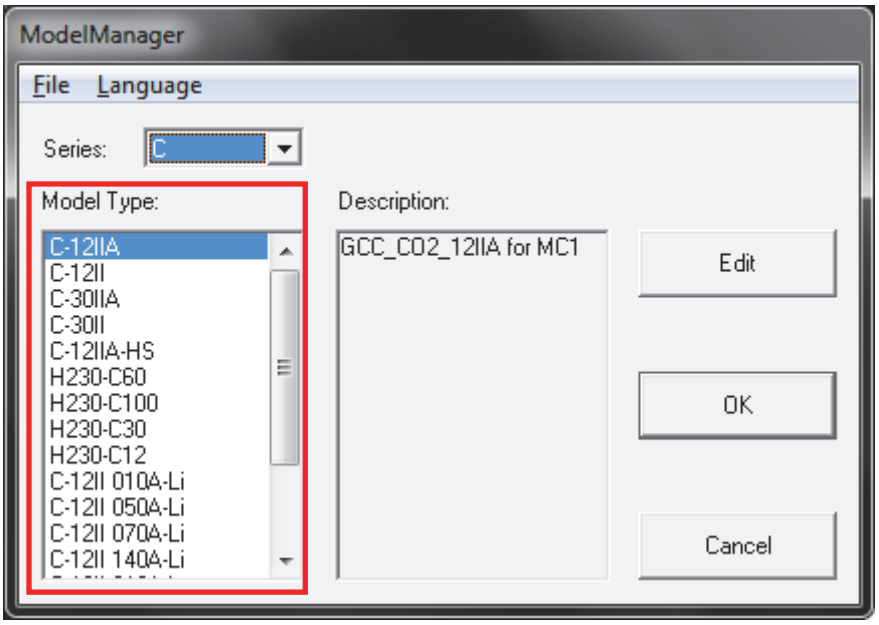
Step 7. At 95% completion of the installation, the ModelManger window will show up



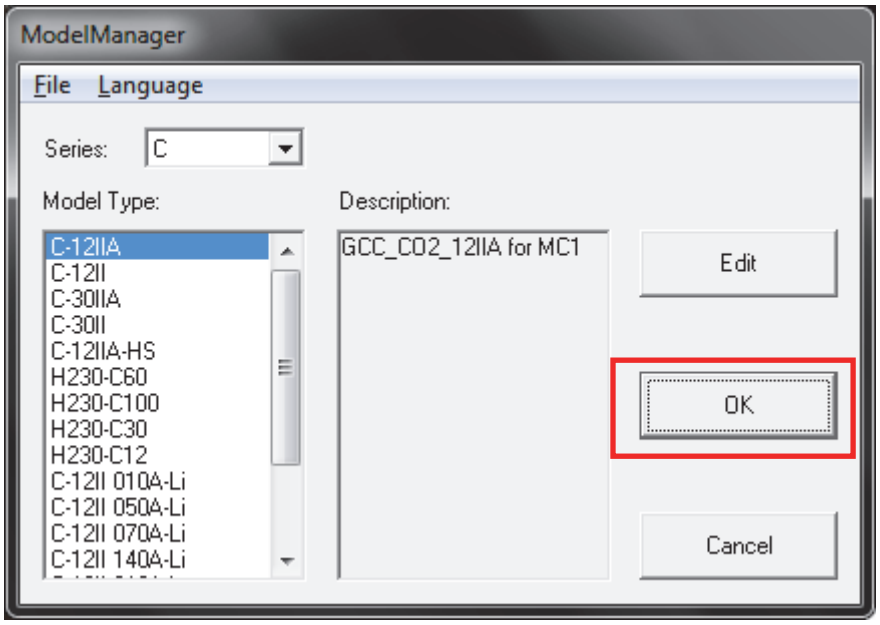
.

Step 8. Select your series & model type

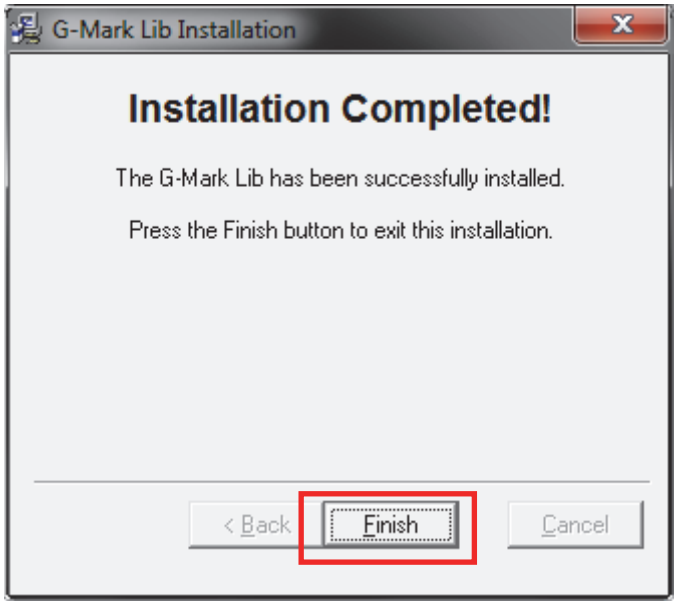




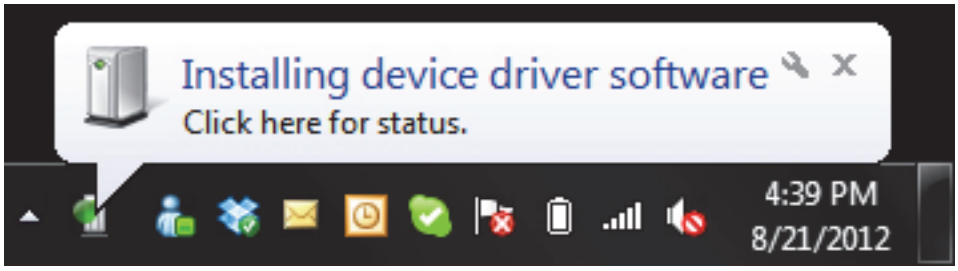
Step 9. Click “OK”



Step 10. Click “Finish” to complete the installation



Step 11. Once the installation is completed, you will find “Laser marking controller” at the lower right hand corner on your computer screen, this indicates the computer is able to communicate with StellarMark.



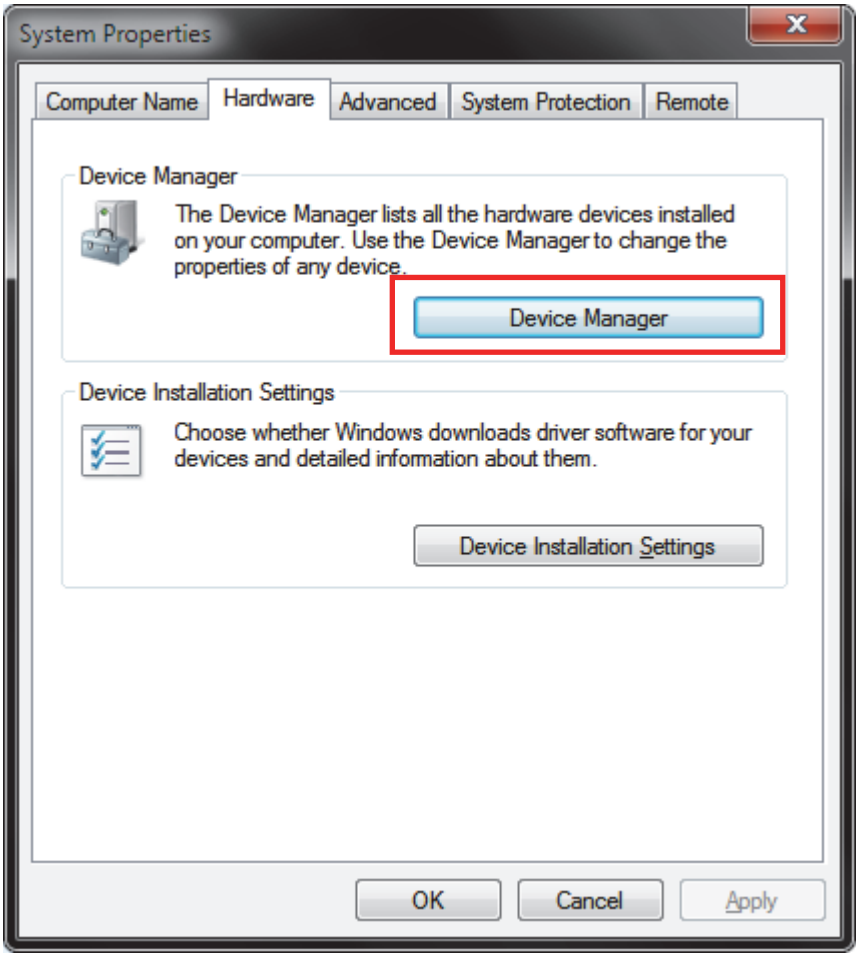
Step 12. Open a new G-Mark file

NOTE

If “Laser marking controller” is not showing at the lower right hand corner of your computer screen, G-Mark will not be able to be activated.
Please perform the following steps:

A. Please go to “Control” and click on “System”

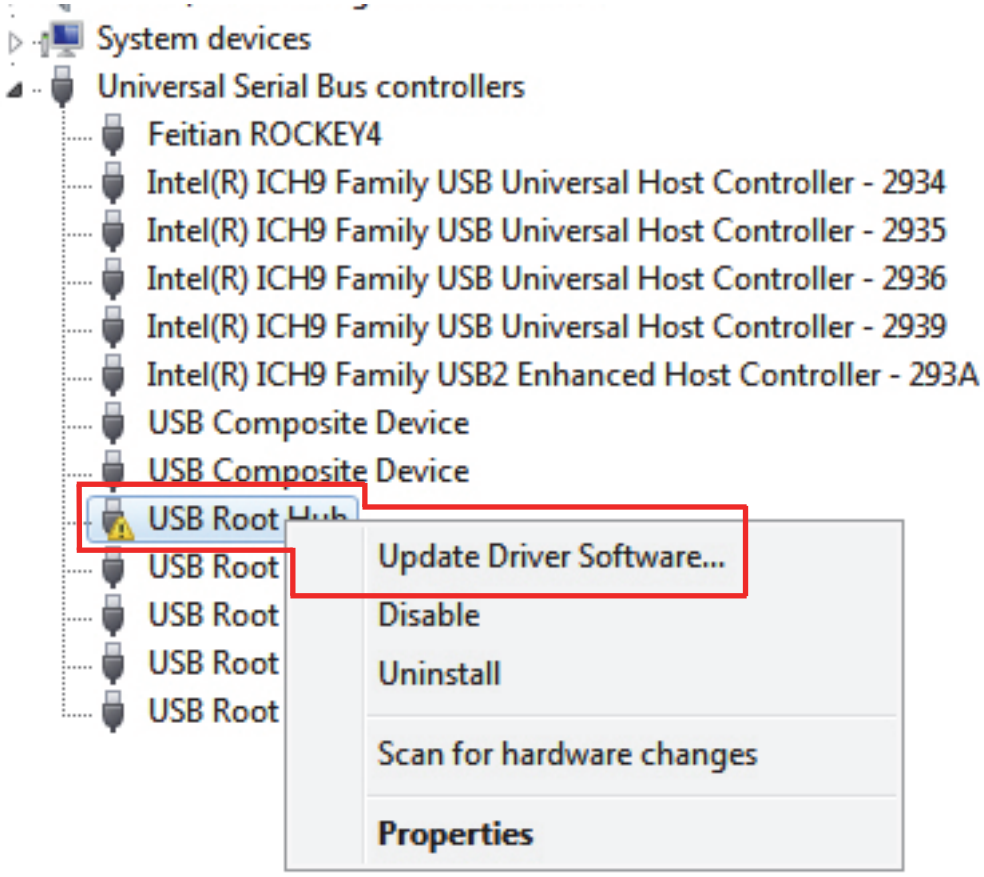
B. Then click on “Hardware” and go to the “Device manager”



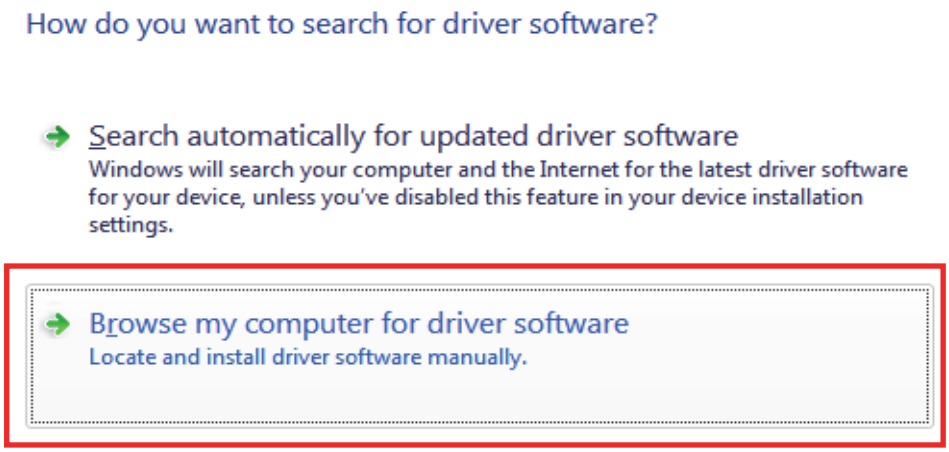
C. Please check if there is any “!” USB device from the below chart:

Sensors
Sound, video and game controllers
System devices
Universal Serial Bus controllers
Feitian ROCKEY4
Intel(R) ICH9 Family USB Universal Host Controller - 2934
Intel(R) ICH9 Family USB Universal Host Controller - 2935
Intel(R) ICH9 Family USB Universal Host Controller - 2936
Intel(R) ICH9 Family USB Universal Host Controller - 2939
Intel(R) ICH9 Family USB2 Enhanced Host Controller - 293A
USB Composite Device
USB Composite Device
USB Root Hub
USB Root Hub

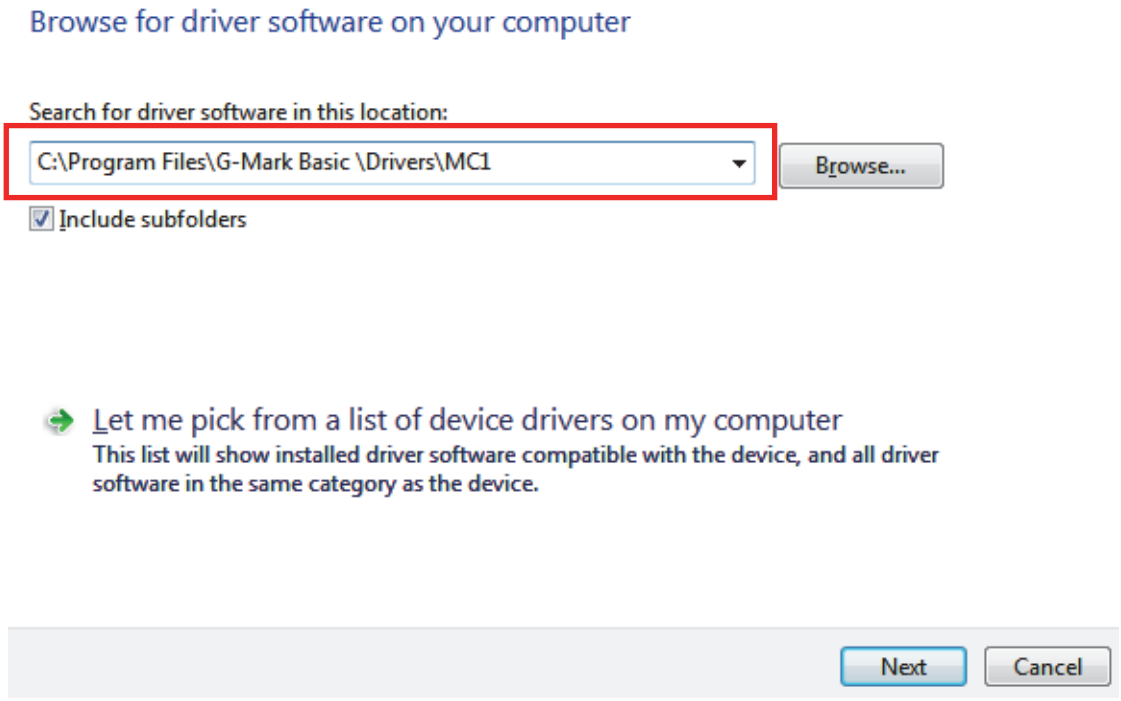
D. Then click on “USB Driver’ and click on right mouse button and update the driver.


System devices
Universal Serial Bus controllers
Feitian ROCKEY4
Intel(R) ICH9 Family USB Universal Host Controller - 2934
Intel(R) ICH9 Family USB Universal Host Controller - 2935
Intel(R) ICH9 Family USB Universal Host Controller - 2936
Intel(R) ICH9 Family USB Universal Host Controller - 2939
Intel(R) ICH9 Family USB2 Enhanced Host Controller - 293A
USB Composite Device
USB Composite Device
USB Root
USB Root
USB Root
USB Root
USB Root
Update Driver Software...
Disable
Uninstall
Scan for hardware changes
Properties

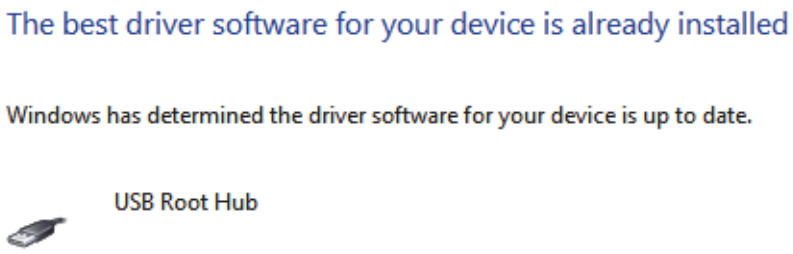
E. Click on ”Browse my computer for driver software”


How do you want to search for driver software?
Search automatically for updated driver software
Windows will search your computer and the Internet for the latest driver software for your device, unless you've disabled this feature in your device installation settings.
Browse my computer for driver software
Locate and install driver software manually.

F. Key in the specific path: “C:\Program Files\G-Mark Lib \Drivers\MC1. Then press “Next..


Browse for driver software on your computer
Search for driver software in this location:
C:\Program Files\G-Mark Basic \Drivers\MC1
Browse...
Include subfolders
Let me pick from a list of device drivers on my computer
This list will show installed driver software compatible with the device, and all driver software in the same category as the device.
Next
Cancel

G. Press “Finish” and now you can activate the G-Mark software


The best driver software for your device is already installed
Windows has determined the driver software for your device is up to date.
USB Root Hub

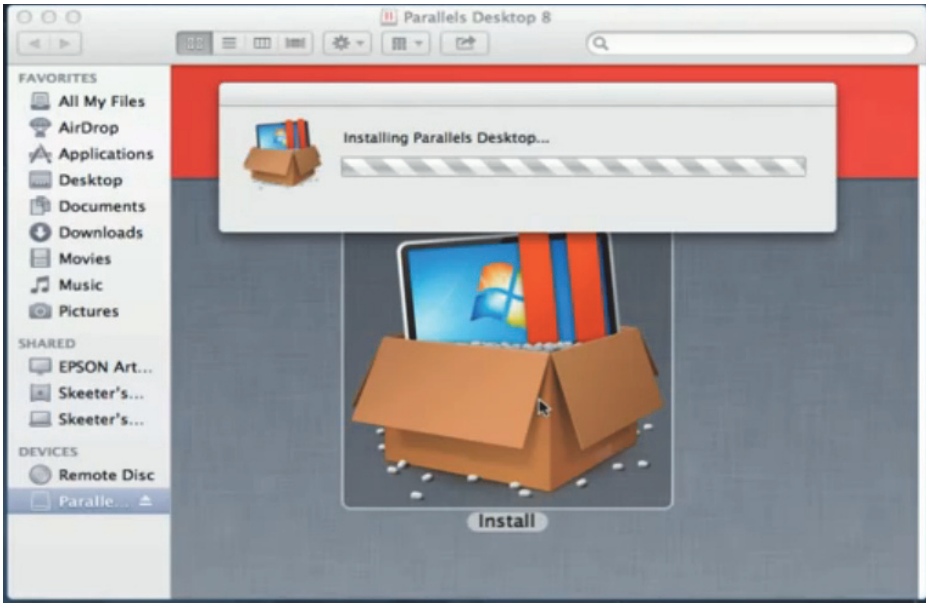
6.3 Software Installation for MAC System

MAC users can use GCC StellarMark machines by purchasing the Parallels Desktop software which allows you to install Windows OS in MAC computers and run Windows based software under MAC computer and output with G-Mark.

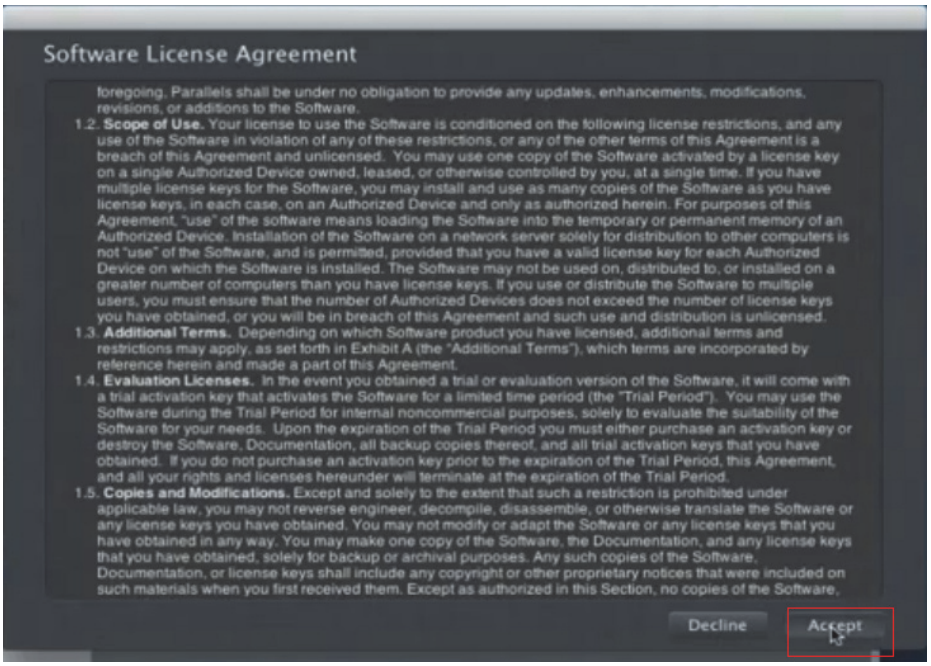
Step 1. Purchase Parallels Desktops on its official website.

Parallels Desktop 8 for Mac
The #1 choice of customers worldwide to run Windows on Mac
Parallels Desktop 8 for Mac lets you seamlessly run Windows and Mac applications side-by-side, without rebooting.
Enjoy the latest Mountain Lion and Lion features in Windows apps, and remotely access your Windows and Mac programs from your iPad or iPhone with the Parallels Mobile app, available for purchase in the App Store.
In addition to Windows 7, other OSes can also be run in Parallels Desktop 8 for Mac, including Windows 8, Windows Vista, Windows XP, Windows 98, Linux, and Google Chrome OS.
OS X Mountain Lion
Buy $79.99
Watch Video
Try Free
Upgrade now for $49.99

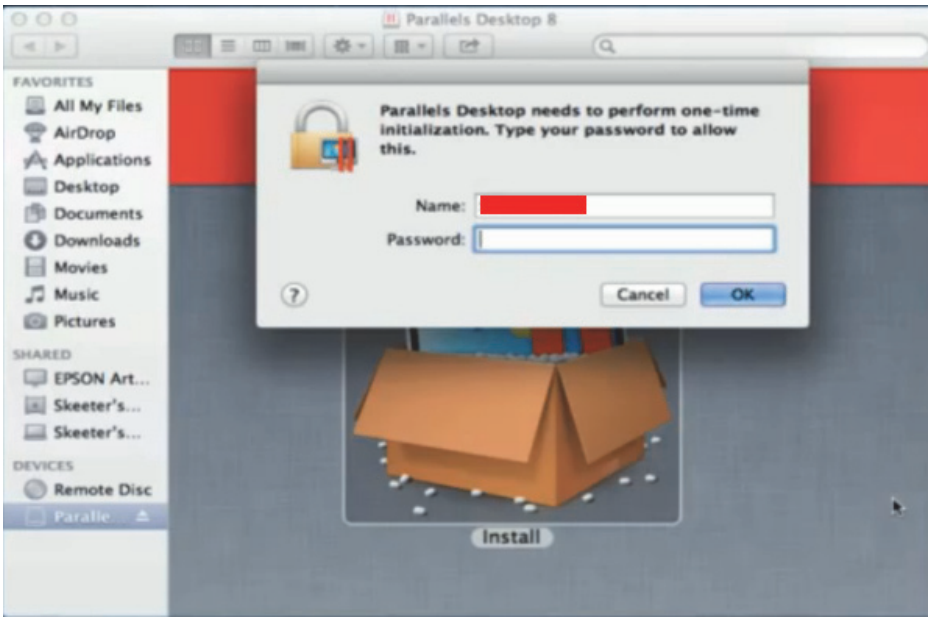
Step 2. Install Parallels Desktops under Mac OS environment.



Step 3. Read Software License Agreement and press “Accept” to continue installation

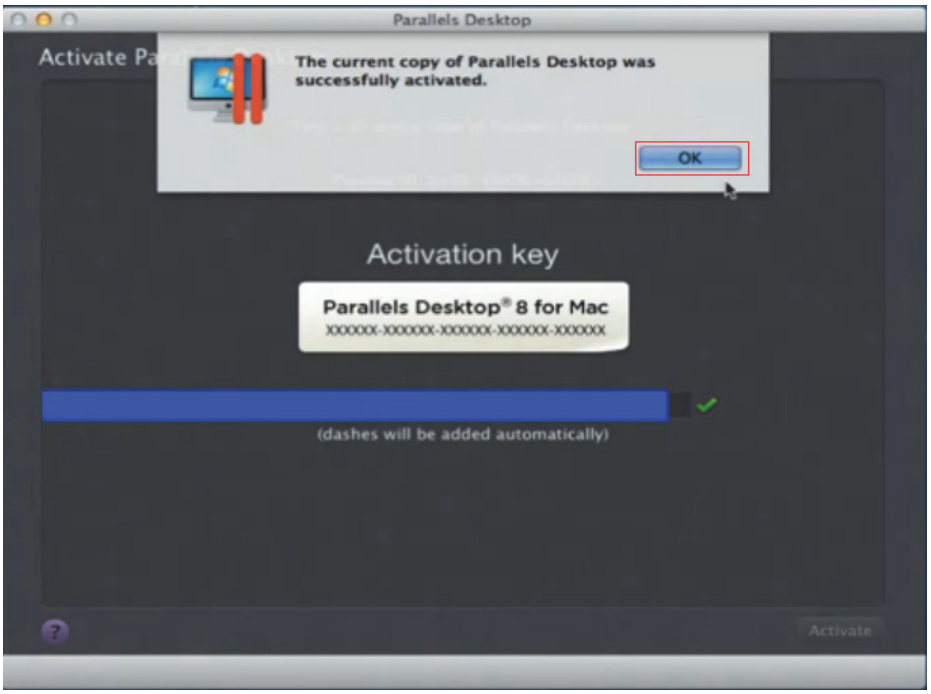

Software License Agreement
foregoing. Parallels shall be under no obligation to provide any updates, enhancements, modifications, revisions, or additions to the Software.
1.2. Scope of Use. Your license to use the Software is conditioned on the following license restrictions, and any use of the Software in violation of any of these restrictions, or any of the other terms of this Agreement is a breach of this Agreement and unlicensed. You may use one copy of the Software activated by a license key on a single Authorized Device owned, leased, or otherwise controlled by you, at a single time. If you have multiple license keys for the Software, you may install and use as many copies of the Software as you have license keys, in each case, on an Authorized Device and only as authorized herein. For purposes of this Agreement, “use” of the software means loading the Software into the temporary or permanent memory of an Authorized Device. Installation of the Software on a network server solely for distribution to other computers is not “use” of the Software, and is permitted, provided that you have a valid license key for each Authorized Device on which the Software is installed. The Software may not be used on, distributed to, or installed on a greater number of computers than you have license keys. If you use or distribute the Software to multiple users, you must ensure that the number of Authorized Devices does not exceed the number of license keys you have obtained, or you will be in breach of this Agreement and such use and distribution is unlicensed.
1.3. Additional Terms. Depending on which Software product you have licensed, additional terms and restrictions may apply, as set forth in Exhibit A (the “Additional Terms”), which terms are incorporated by reference herein and made a part of this Agreement.
1.4. Evaluation Licenses. In the event you obtained a trial or evaluation version of the Software, it will come with a trial activation key that activates the Software for a limited time period (the “Trial Period”). You may use the Software during the Trial Period for internal noncommercial purposes, solely to evaluate the suitability of the Software for your needs. Upon the expiration of the Trial Period you must either purchase an activation key or destroy the Software, Documentation, all backup copies thereof, and all trial activation keys that you have obtained. If you do not purchase an activation key prior to the expiration of the Trial Period, this Agreement, and all your rights and licenses hereunder will terminate at the expiration of the Trial Period.
1.5. Copies and Modifications. Except and solely to the extent that such a restriction is prohibited under applicable law, you may not reverse engineer, decompile, disassemble, or otherwise translate the Software or any license keys you have obtained. You may not modify or adapt the Software or any license keys that you have obtained in any way. You may make one copy of the Software, the Documentation, and any license keys that you have obtained, solely for backup or archival purposes. Any such copies of the Software, Documentation, or license keys shall include any copyright or other proprietary notices that were included on such materials when you first received them. Except as authorized in this Section, no copies of the Software,
Decline
Accept

Step 4. Enter your Mac OS X User Name and Password then press “OK”

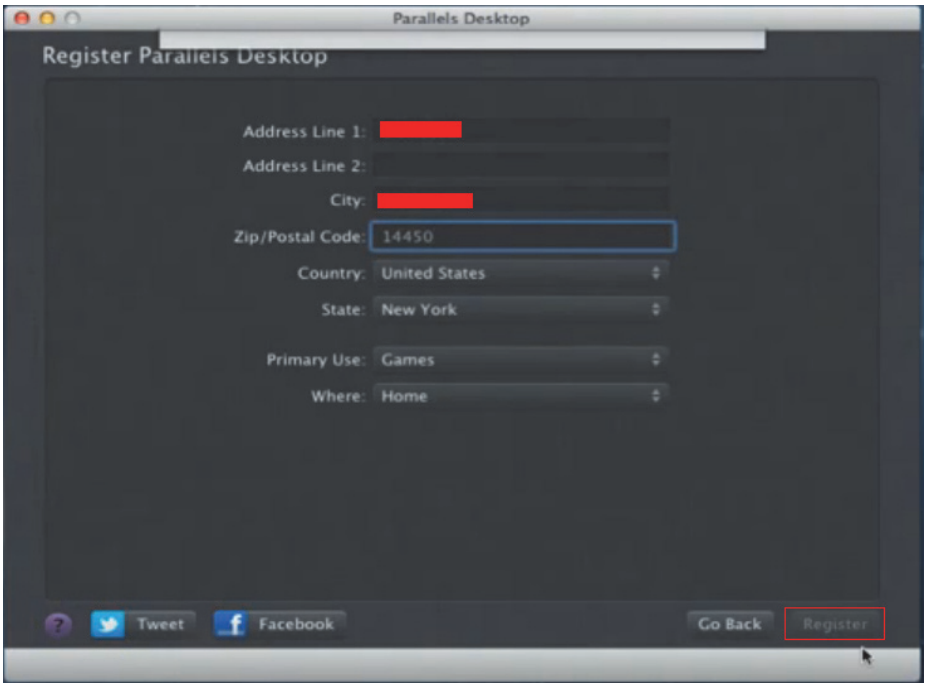


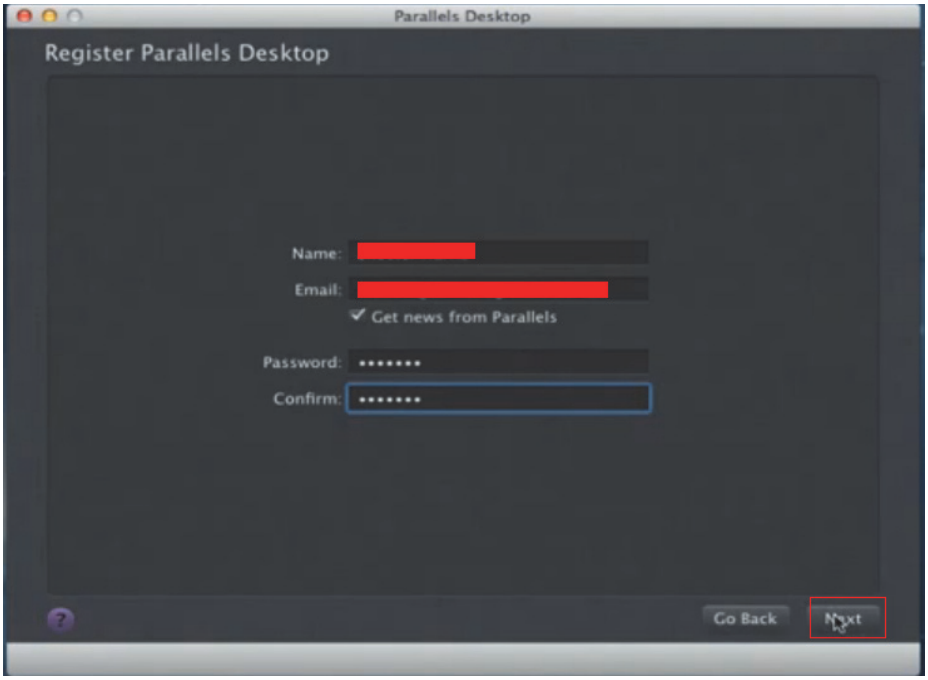
Step 5. Press “Active”

Step 6. Press “OK” when activation is complete.



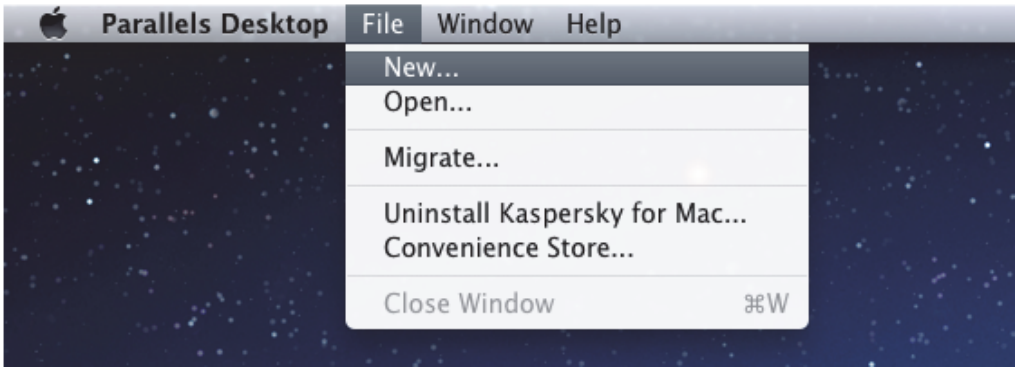
Step 7. Register Parallels Desktop



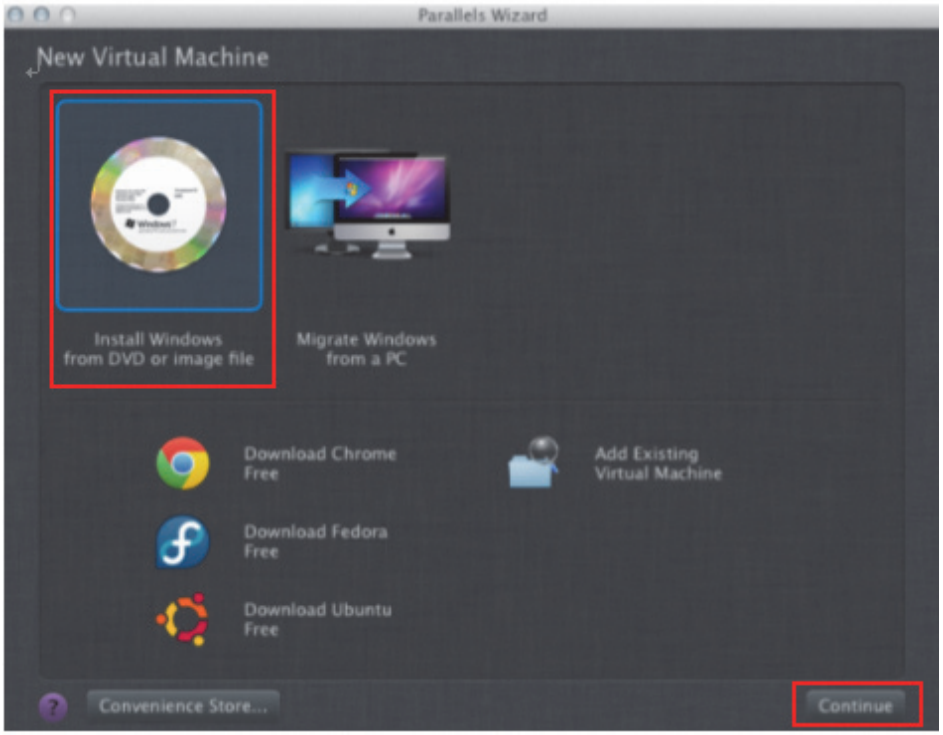


Step 8. Press “Register” and “OK” to complete the installation of Parallels Desktop.

Step 9. Open **Parallels Desktop** (in the **Applications** folder) then choose **File → New**

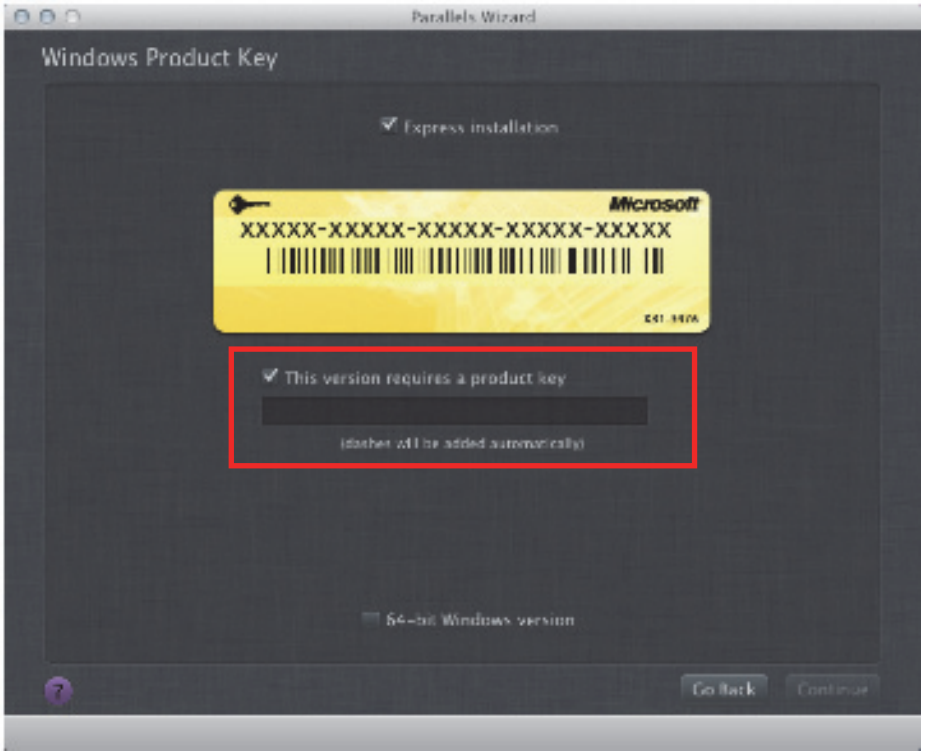


Step 10. Press “Install Windows from DVD or image file” then press “continue” to install windows OS



Step 11. Select CD-ROM drive with the Windows installation CD

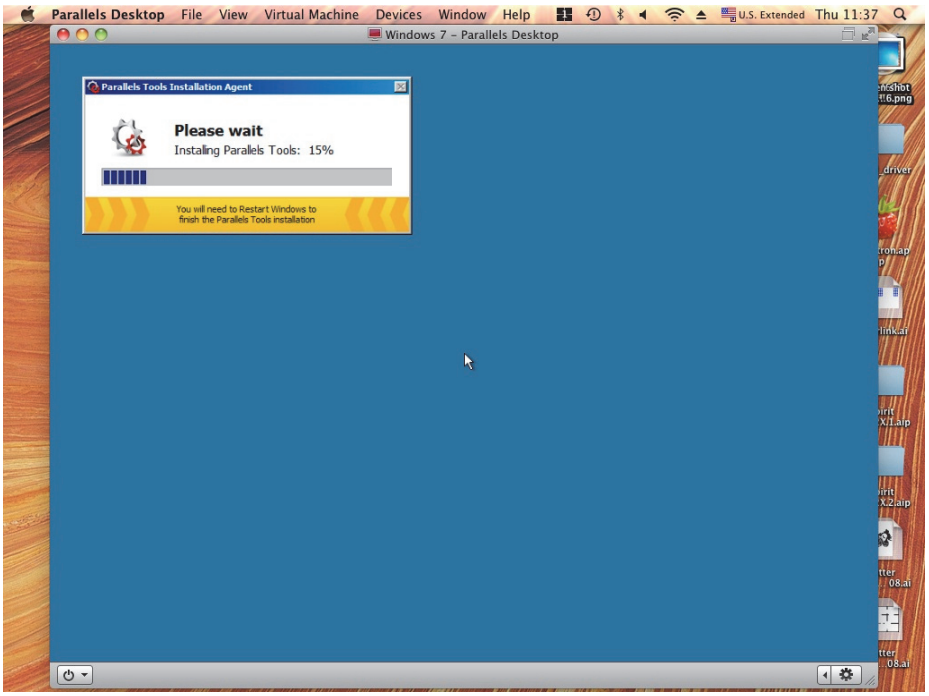
Step 12. Enter the Windows OS product key

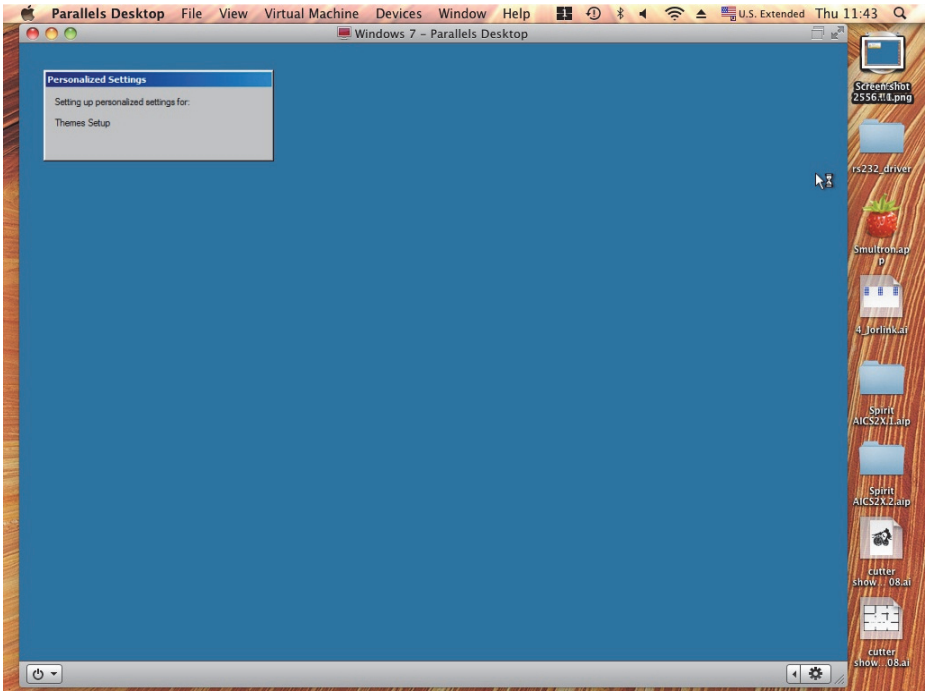


Step 13. Select how you would like to run your Windows program.

Parallels Wizard
Integration with Mac
How do you want your Windows programs to work?
Like a Mac
Let Windows programs appear without the Windows desktop. Keep my documents, music, and pictures together and available to Windows and Mac applications.
Like a PC
Keep the Windows desktop and programs together in one window, but let me drag and drop objects and cut and paste text between Windows and the Mac.
Help me choose
Go Back
Continue

Step 14. After the prior setting is complete the windows OS installation procedure will start automatically.

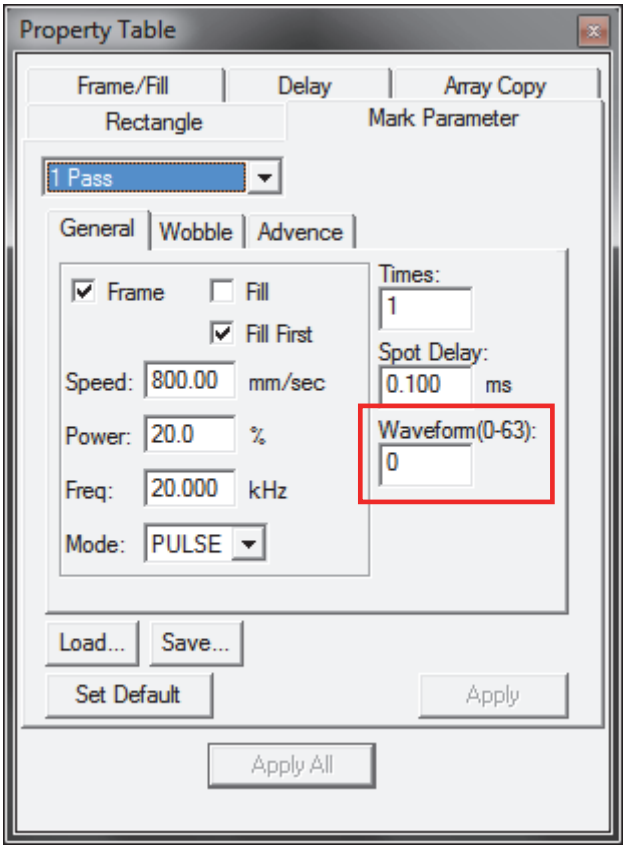

Parallels Desktop File View Virtual Machine Devices Window Help U.S. Extended Thu 11:37
Windows 7 - Parallels Desktop
Parallels Tools Installation Agent
Please wait
Installing Parallels Tools: 15%
You will need to Restart Windows to finish the Parallels Tools installation


Parallels Desktop File View Virtual Machine Devices Window Help U.S. Extended Thu 11:43
Windows 7 - Parallels Desktop
Personalized Settings
Setting up personalized settings for:
Themes Setup

Step 15. Windows OS installation is complete then you can refer to “6.2 Software Installation for windows system” to install G-Mark / G-Mark Library.

6.4 Waveform Parameter Adjustment

Waveform is a setting available for fiber laser models. Adjusting the Waveform will affect the pulse width of the laser and so resulting effects. Waveform settings can be adjusted under the Marking Parameter tab of the Property Table.



NOTE

Waveform adjustment is only available for StellarMark IF-20SHS or IF40HHS models. Please refer to the product identification plate on the machine to confirm your model type.

Chapter 7

Lens Adjustment

Import Lens Parameter

Lens Parameter Card

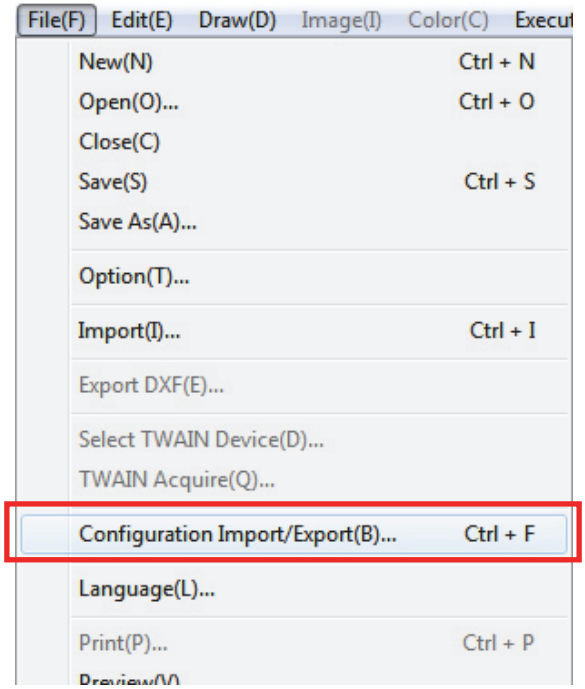
Lens Parameter Adjustment

7.1 Import Lens Parameter

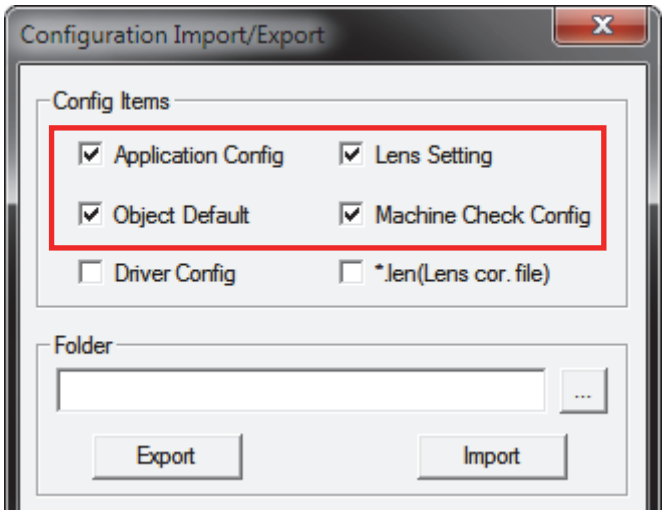
Please perform the following steps:

Step 1. Start the G-Mark program.

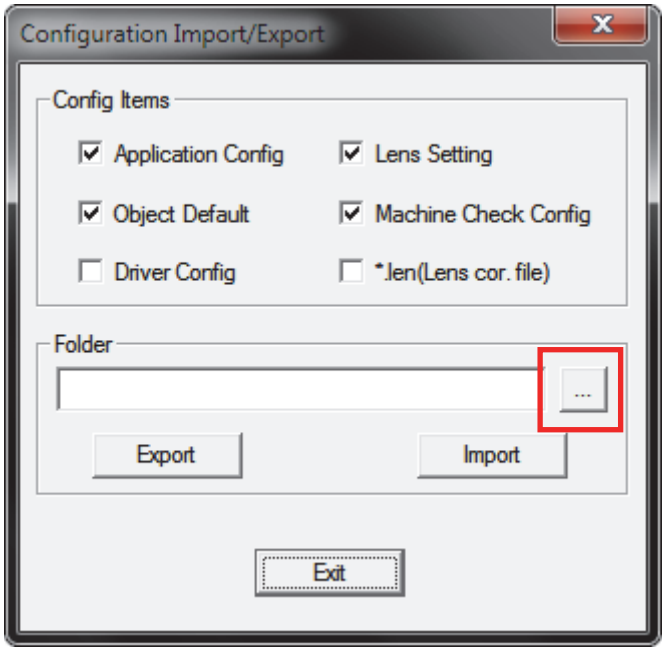
Step 2. Select File→Configuration Import/Export.



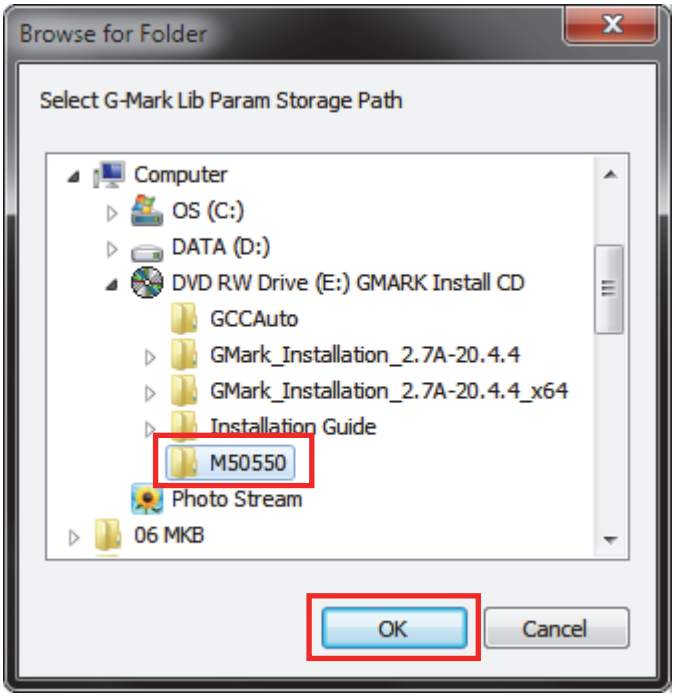
Step 3. Check the Application Config, Lens Setting, Object Default and Machine Check Config selections.



Step 4. Click on the Folder location icon shown below.

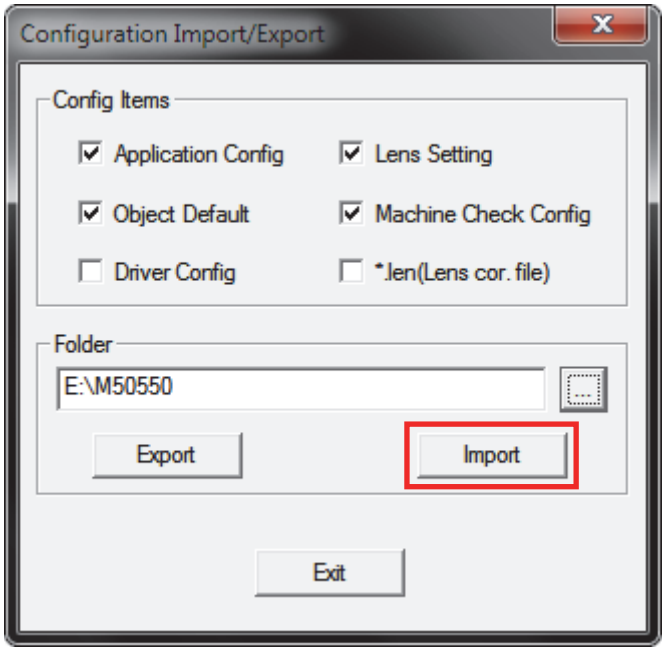


Step 5. Locate the Lens Parameter folder in the Installation CD and select OK. (The lens parameter folder is named with the serial number of your machine.).

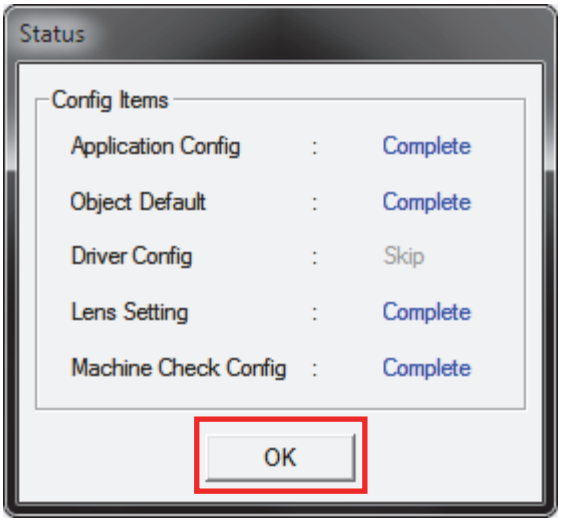


If there is no “Lens Parameter” folder found under G-Mark installation CD, please skip to follow ”7.2 Lens Parameter Card” instructions.

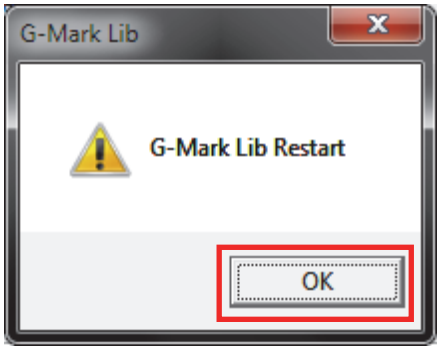
Step 6. Click the "Import" button.



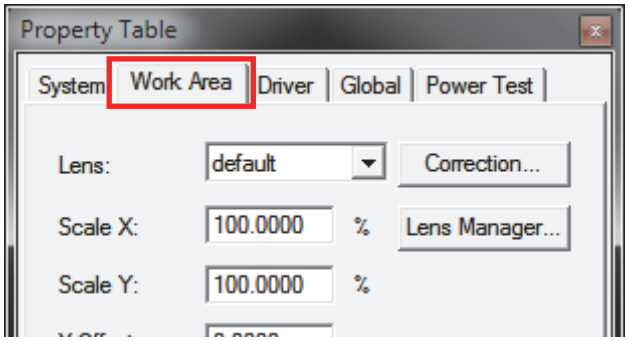
Step 7. Click on the "OK" button after the Status screen shows Complete.



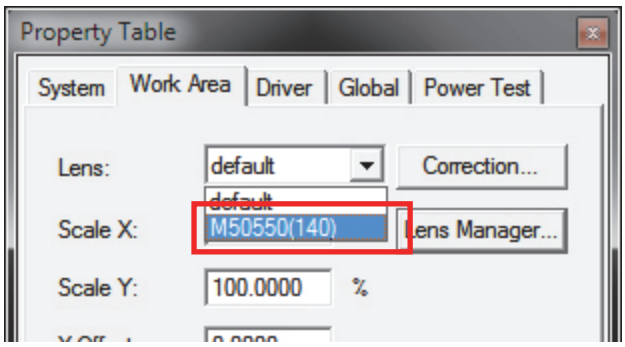
Step 8. Click on "OK" when the "Restart message prompts up.



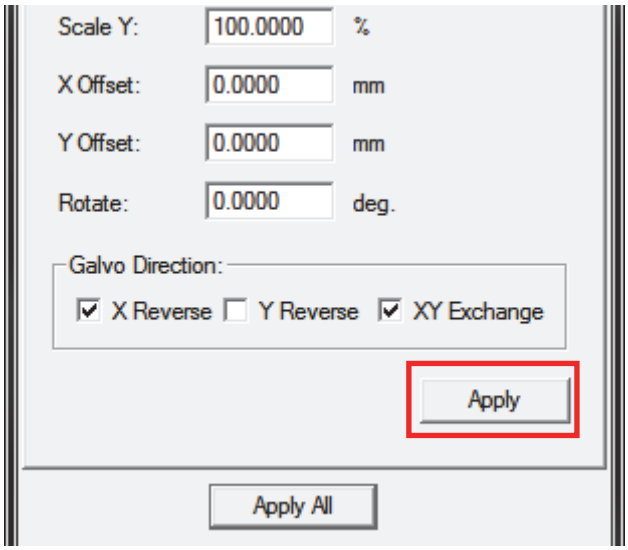
Step 9. Click on the "Work Area" Tab under the Property Table after G-Mark restarts.



Step 10. The Lens parameter can be found in the Lens list. (Named with the serial number of your machine.).



Step 11. Click on "Apply" after selecting the Lens and the settings will be loaded.



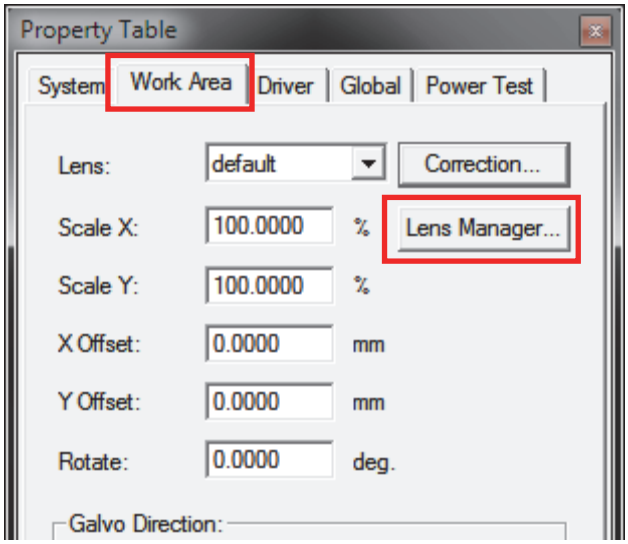
7.2 Lens Parameter Card

Before you start to operate the machine, the output scale of machine and the marking software must be adjusted to match each other.
Or the marking lines will be distorted or will have an improper scale of the marking content.

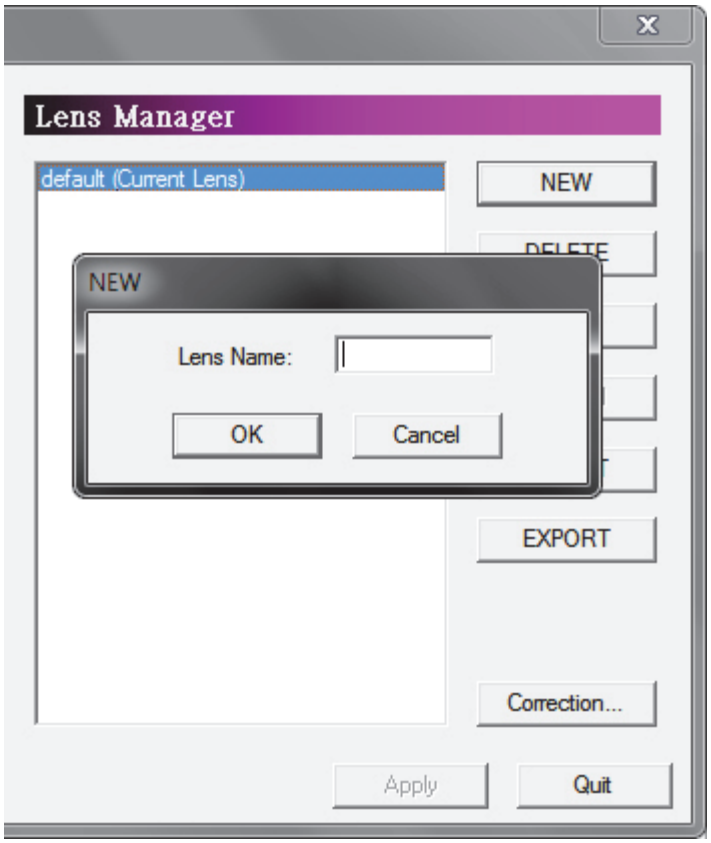
Step 1. Take out the lens parameter card from the accessory kit

Step 2. Open G-Mark marking software

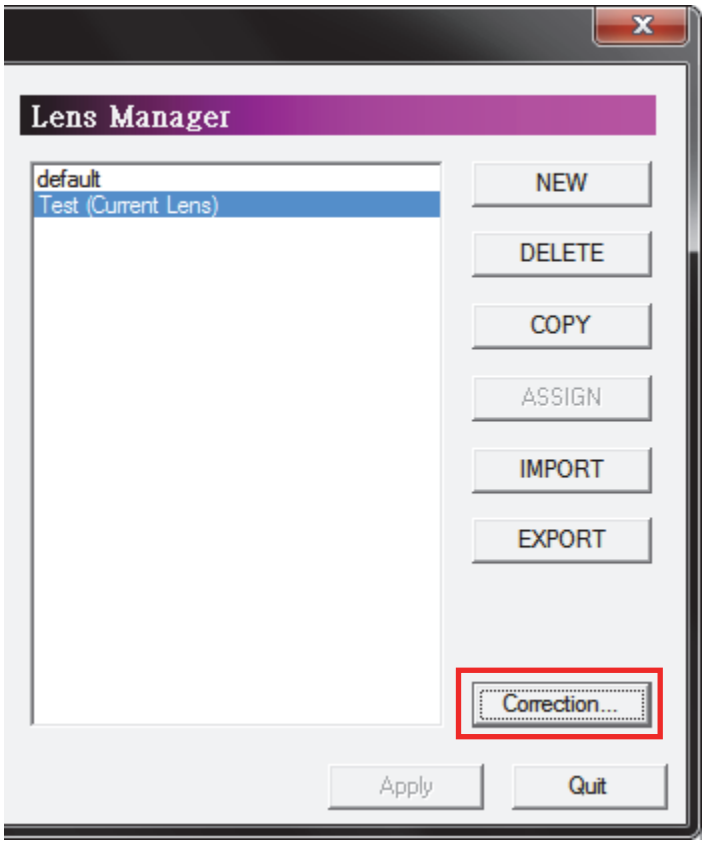
Step 3. Click on work area from property table and press “Lens Manager…”



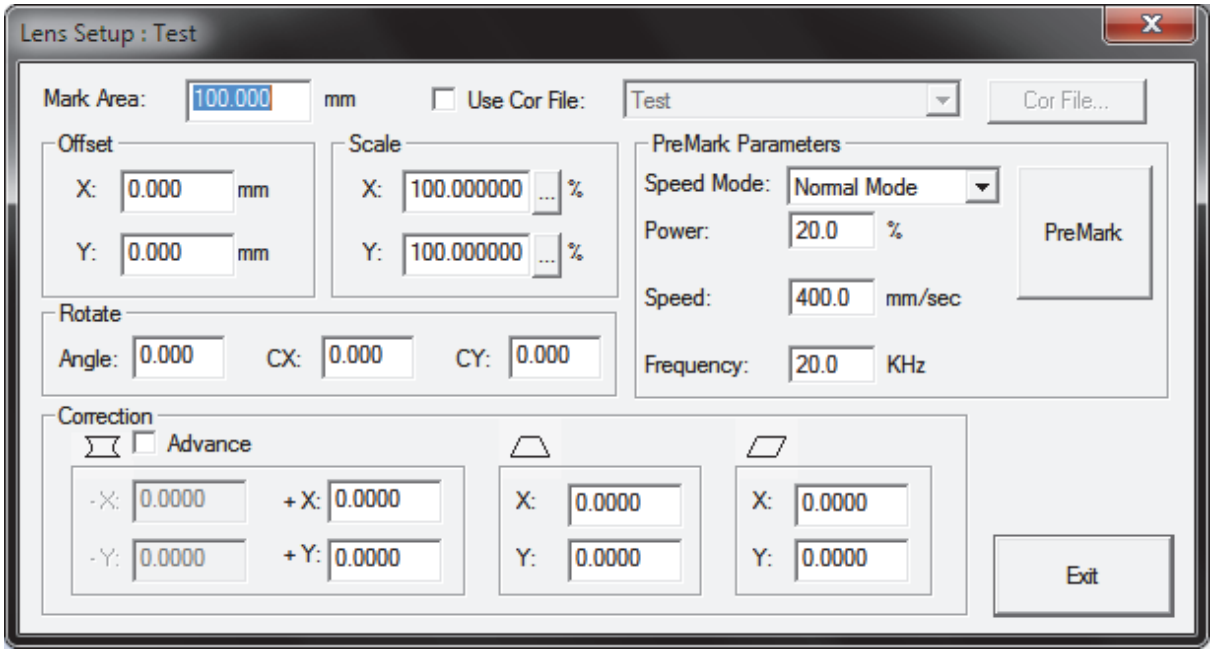
Step 4. Press “New” to create a new name for the lens and press “OK”



Step 5. Click “Correction…” to settings lens



Step 6. Fill in the numbers that are showing on the card to the below table. Press “Exit” to save the settings of the lens



NOTE

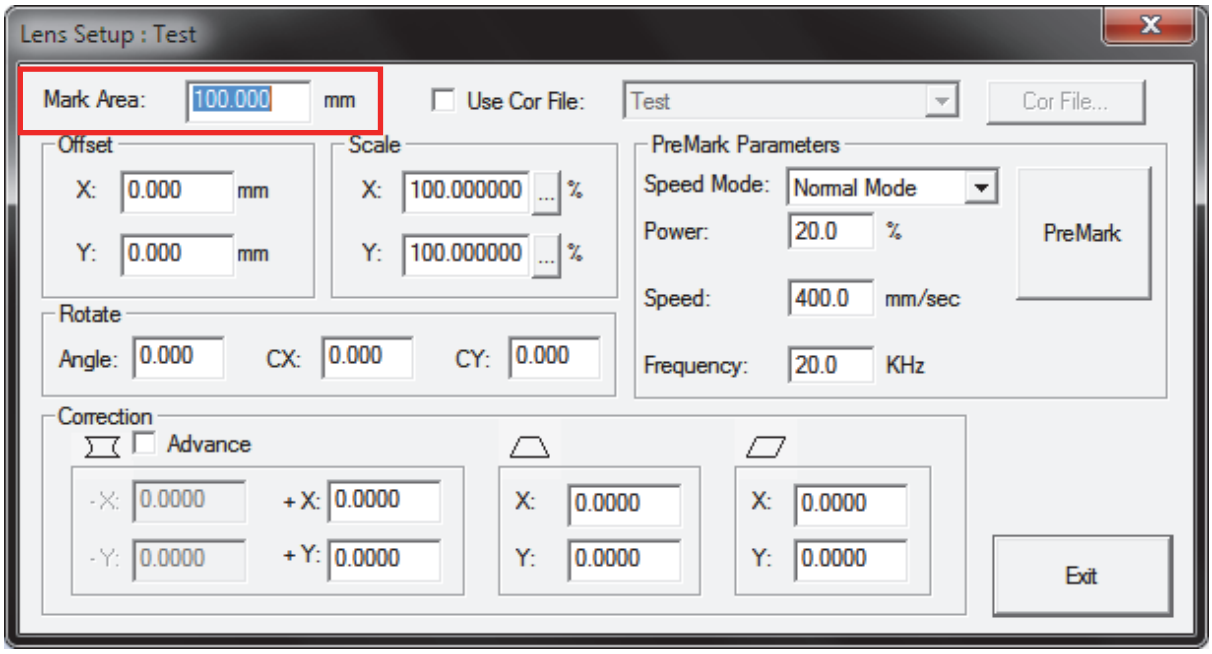
If the size of scan lens is changed, the lens parameter will be varied, too.

7.3 Lens Parameter Adjustment

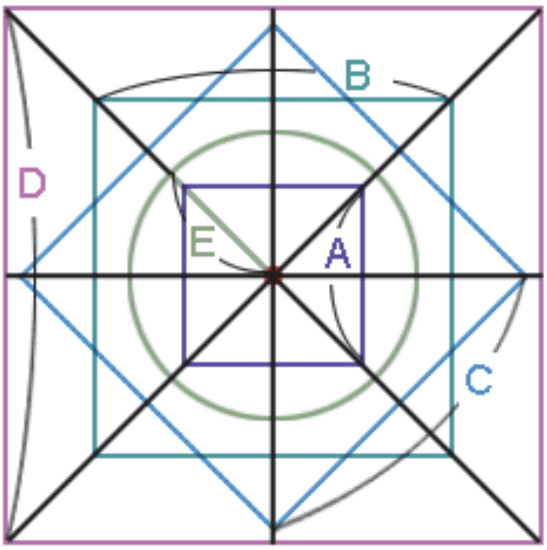
Please perform the following steps to find the appropriate lens parameter when changing a different scan field of scan lens:

Step 1. Create new name for the new lens.

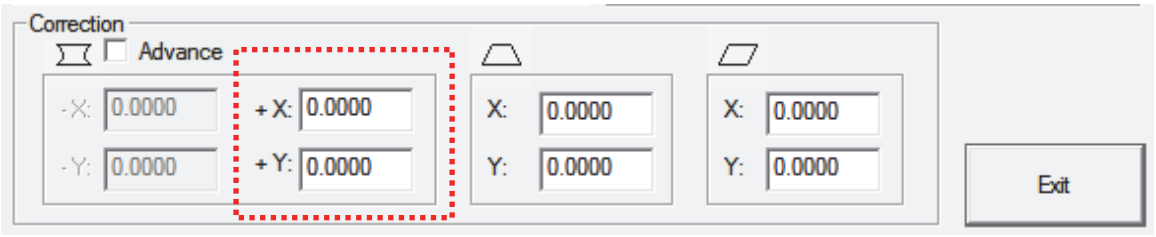
Step 2. Change the mark area and press “Exit” to save the settings



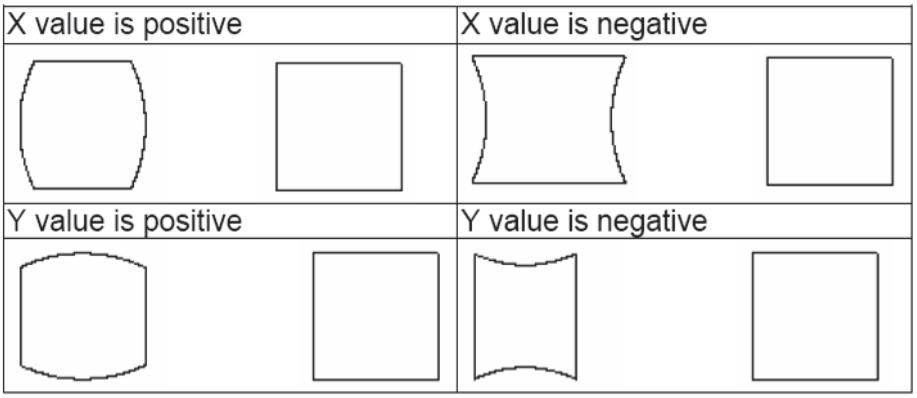
Step 3. Mark the below pattern and check the output quality.



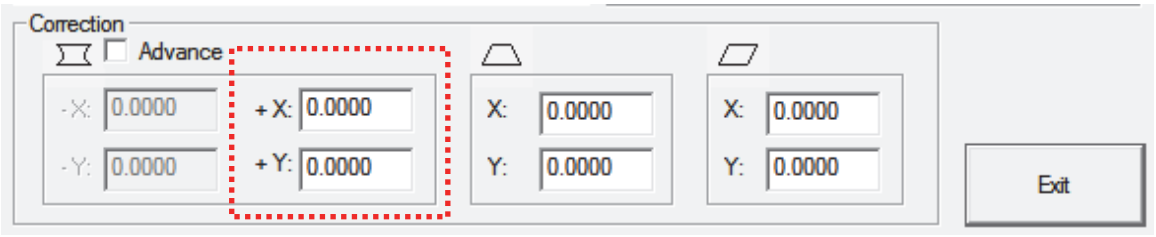
Step 4. If there is barrel square, go back to the “lens setup” to correct it.



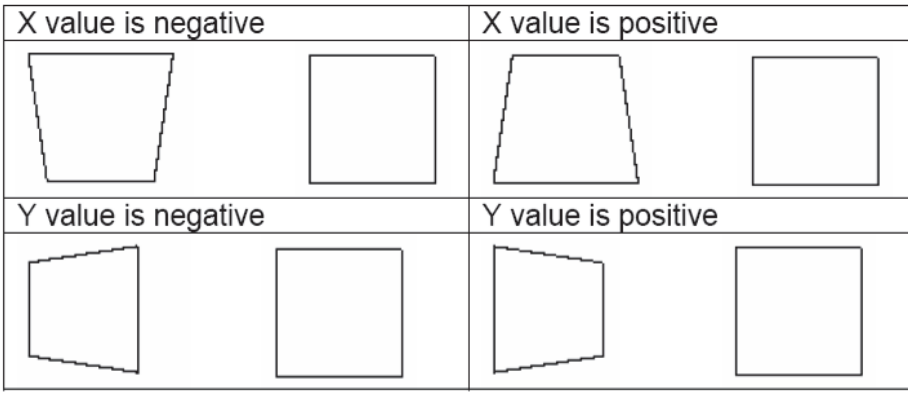
Step 5. If the figure becomes protuberant in X-axis, the X value will need to be Increased like 0.002; while if now it become indentation, the X value will have to be reduced to as 0.0014.
Keep adjusting the value until it is acceptable.



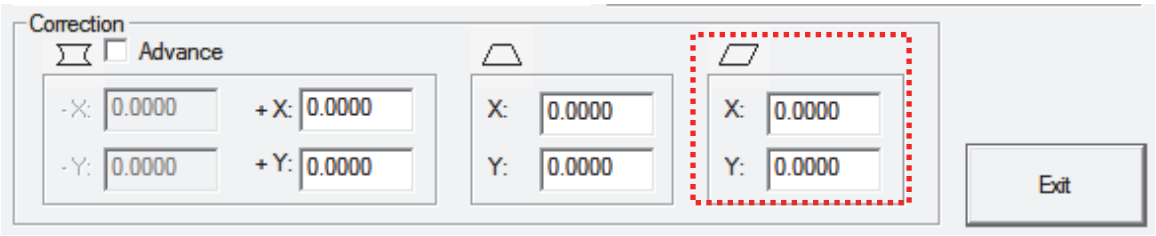
Step 6. If the square is trapezoid, go back to the “lens setup” to correct the irregular square.



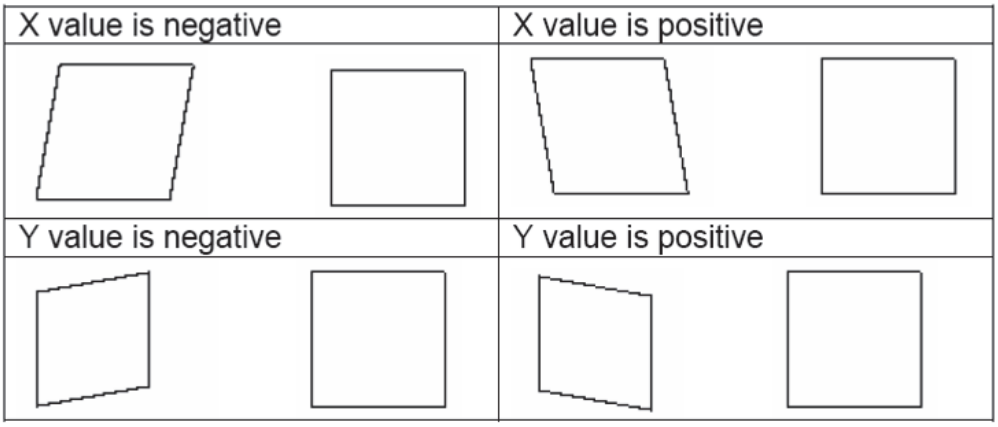
Step 7. If the number is adjusted from 0.0 to 0.1, the adjustment range is from 0mm up to 0.5mm. (For 140x140mm scan lens)
Keep adjusting the value until it is acceptable.



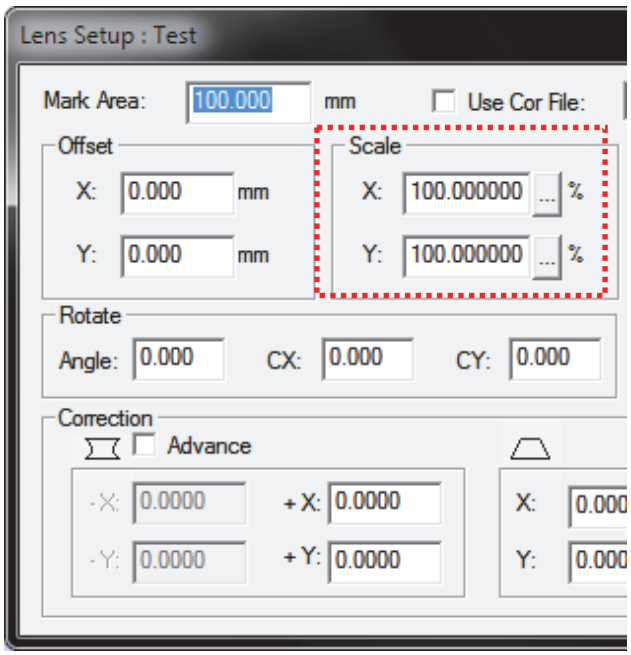
Step 8. If there is an irregular parallelogram, go to the “lens parameter” under the Configure to correct the irregular angle.



Step 9. Keep adjusting the value until it is acceptable.



Step 10. Measure the lengths of A, B, C, D and E of the square pattern. Make sure these lengths match to the expected length you set from the marking software.



Step 11. If not, correct scale proportionally.

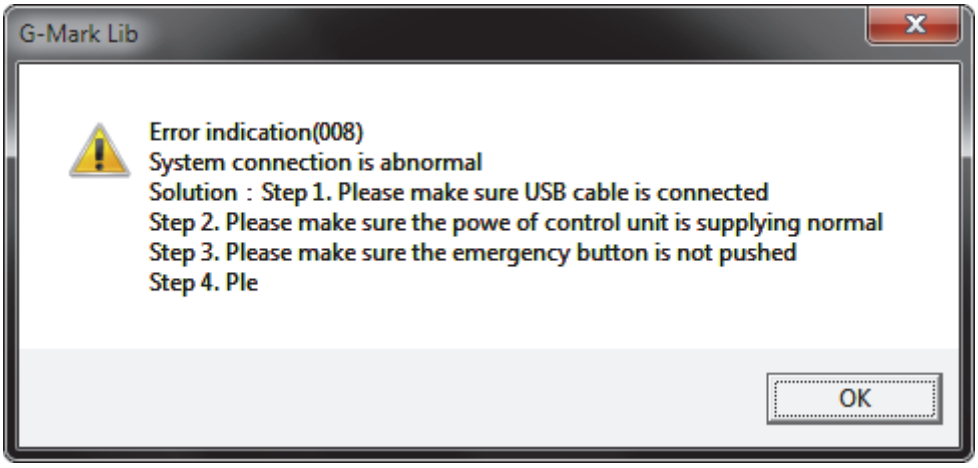
Chapter 8

Error Message

The “Alarm” error indications represent the occurrence of errors which have arisen while the system is working abnormal.

When the error occurs, an “Error message” window will pop out on G-Mark software and the laser will be unable to fire until the problems are solved.

Once the problem is solved, “OK” button must be pressed to close the message window.


G-Mark Lib
Error indication(008)
System connection is abnormal
Solution : Step 1. Please make sure USB cable is connected
Step 2. Please make sure the powe of control unit is supplying normal
Step 3. Please make sure the emergency button is not pushed
Step 4. Ple
OK

The Alarm error indication includes:

Error Indications
X Scan head is abnormal
Y Scan head is abnormal
Base plate temperature fault
Seed laser temperature fault
Power Supply Fault
Beam collimator fault

Chapter 9

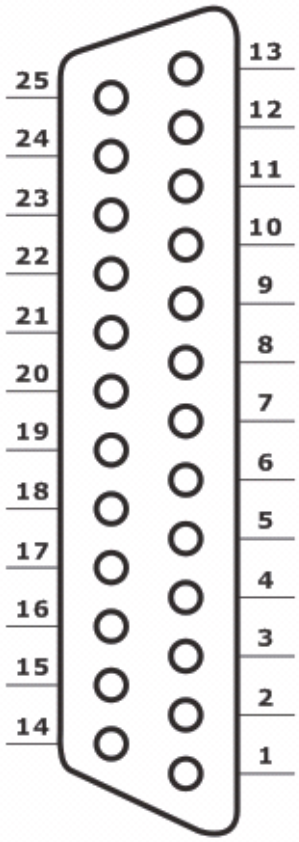
External Control

I/O Pin Assignment

Laser Working Flow Chart

Laser Reaction Timing Diagram

9.1 I/O Pin Assignment



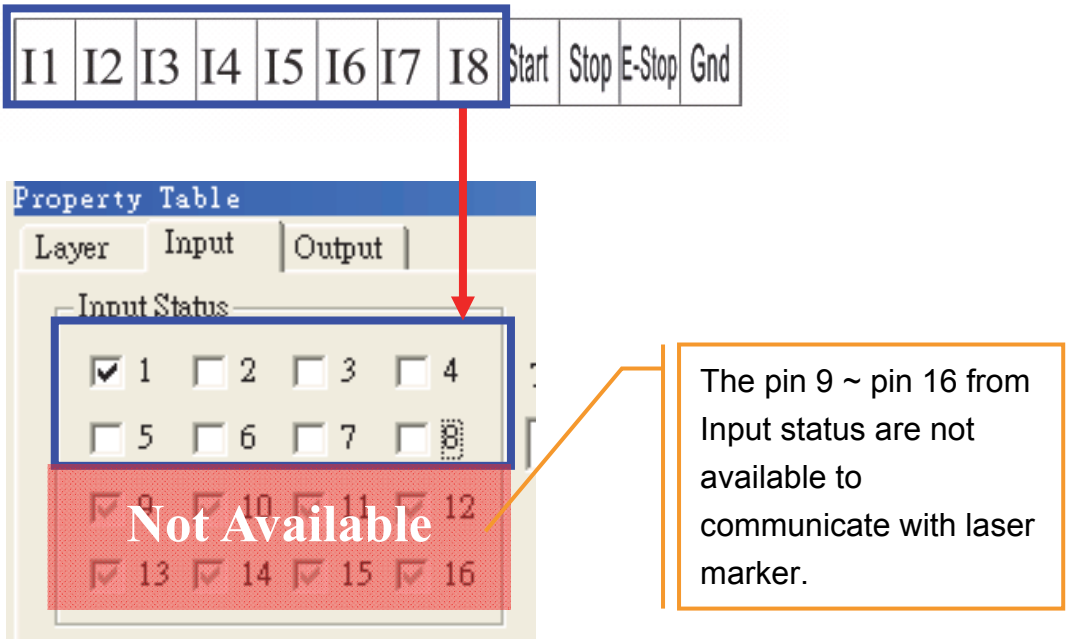
Pin 1~Pin 8	Output 1~8
Pin 9	Alarm
Pin 10	Ready
Pin 11	24V
Pin 12	GND
Pin 13	X
Pin 14~Pin 21	Input 1~8
Pin 22	Start
Pin 23	Stop
Pin 24	E-Stop
Pin 25	GND

I/O	TYPE	DESRIPTION
O1~O8	**OUTPUT**	There are 8 output signals (Stellar Mark → External device) available to communicate with external devices.
Alarm (Out)	**OUTPUT**	➢ When Alarm is inactivated, the laser marker will send signal out. ➢ When Alarm is activated, the laser marker will send out a signal out. ➢ When marking software is opened, the Alarm will be activated and laser marker will send a signal out in the beginning of work. Until the “Execute” button is pressed and the “Marking” window jumps out on marking software, then alarm will change to “inactivated” (laser marker will send a signal out).

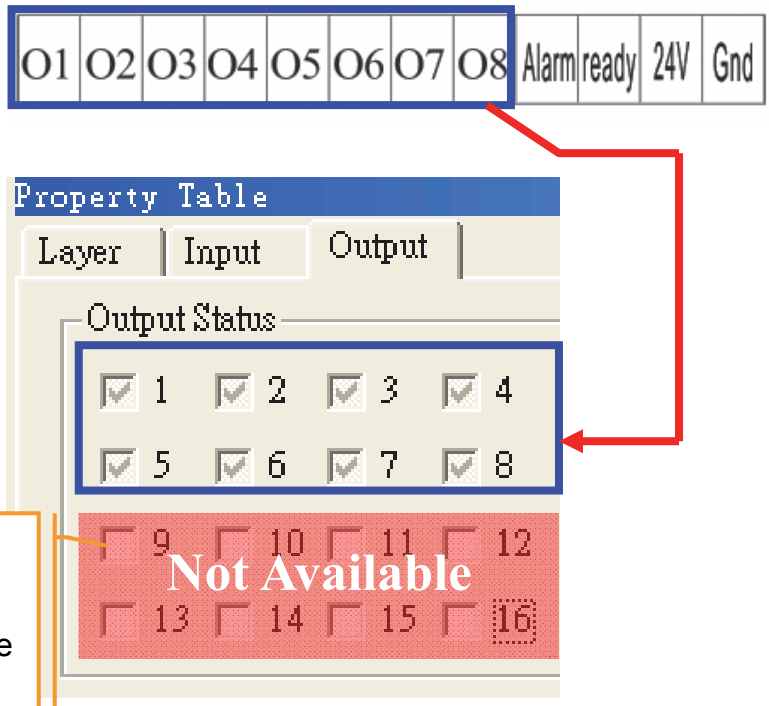
Ready (Out)	**OUTPUT**	➢ When G-Mark Librarysoftware is opened, it will send out a signal out. ➢ When the “Marking” window jumps out and laser Marker is ready to fire; it will send a signal out. ➢ When laser marker is firing, it will send a signal out.
I1~I8	**INPUT**	There are 8 input signals (External device → Stellar Mark) available to communicate with external devices
STOP	**INPUT**	When Stop- pin and Ground pin are at short status, laser marker will stop working.
START	**INPUT**	When Start- pin and Ground pin are at short status, laser marker will trigger the fire.
E-Stop	**INPUT**	This is terminal used to connect external emergency stop.
GND	POWER	Ground
24V	POWER (Output)	A **24V** is available

- The Input and Output pins on the Control Unit are corresponding with the I and O signals on the G-Mark software as below:

(1) <u>Input pins</u>


I1 I2 I3 I4 I5 I6 I7 I8 Start Stop E-Stop Gnd
Property Table
Layer
Input
Output
Input Status
1 2 3 4
5 6 7 8
9 10 11 12
13 14 15 16
Not Available
The pin 9 ~ pin 16 from Input status are not available to communicate with laser marker.

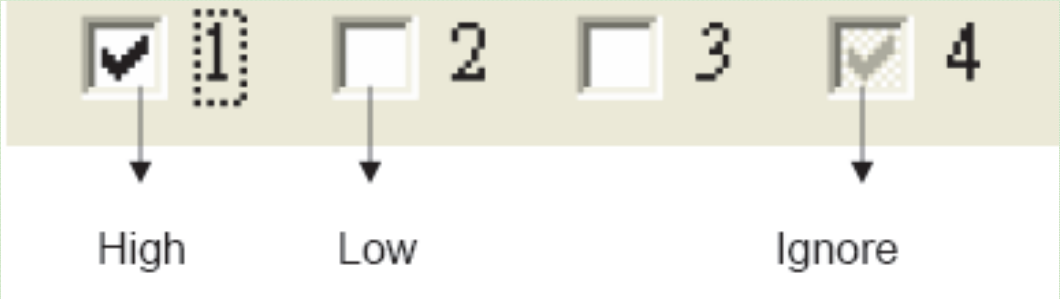
(2) Output pins



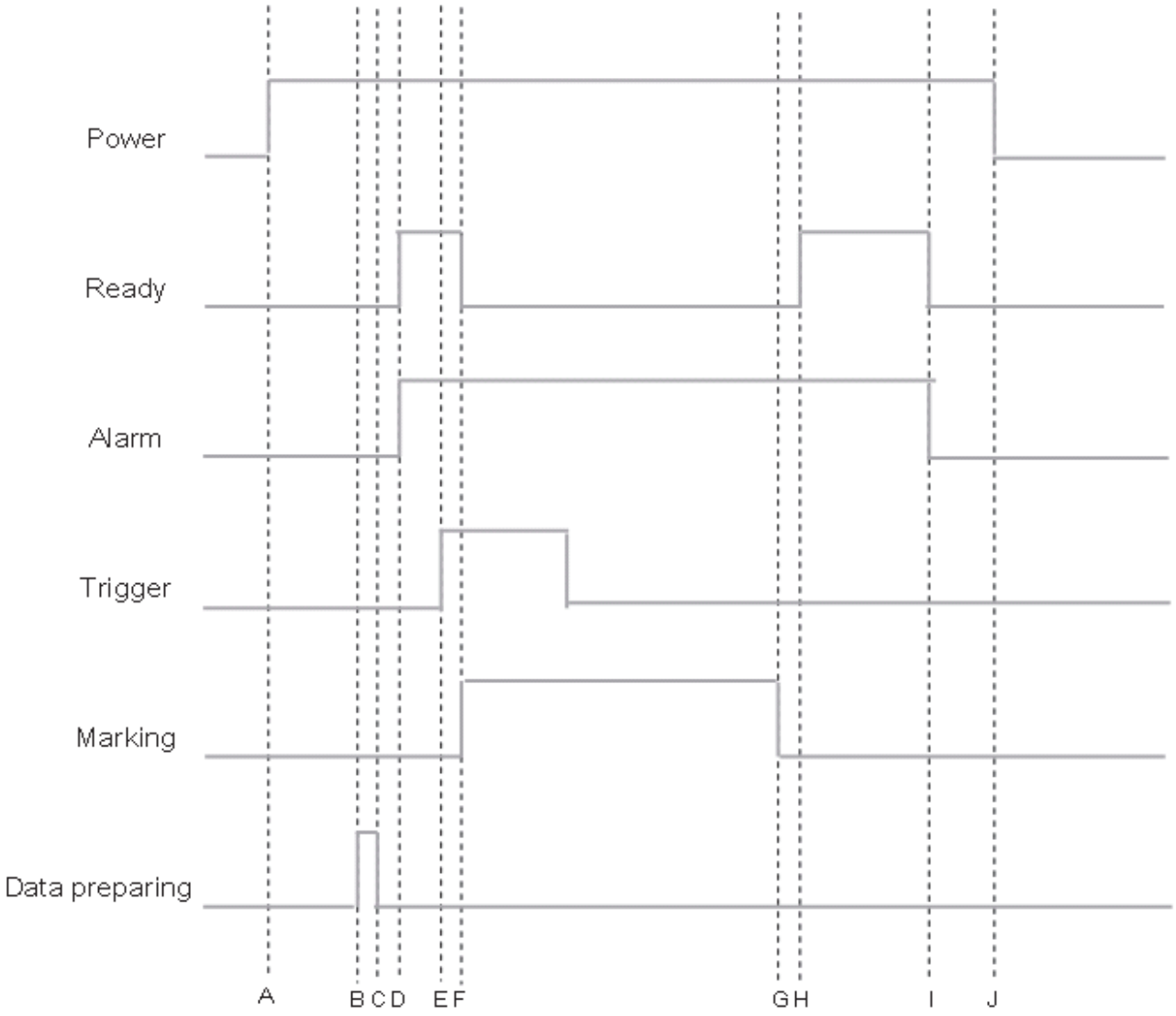
The pin 9 ~ pin 16 from Input status are not available to communicate with laser marker.

NOTE

High / Low definitions in G-Mark Library software



9.2 Laser Working Flow Chart



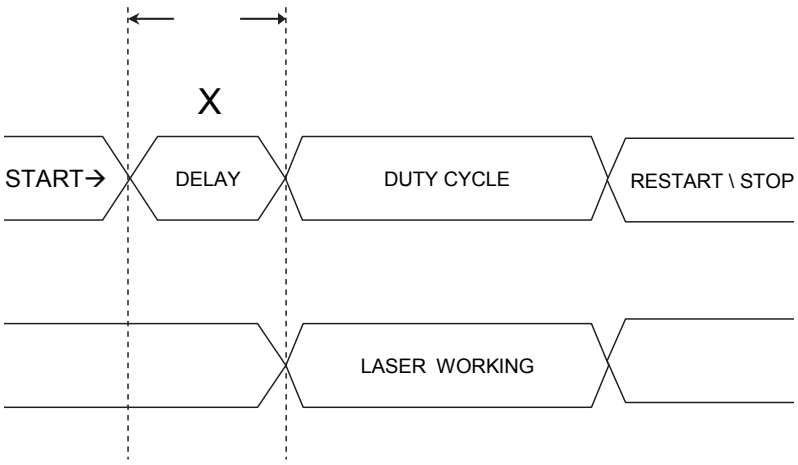
Definitions:

A	Power on
B	Time consuming between the “reading file” to the next step of “Ready to fire” will be depend on the size of working object.
C~D	After the file reading is completed, it will take less than < 1 μ sec for the external device to receive a “Ready” signal from the laser marker
E	It will take between 0.1m sec ~ 50m sec for laser to trigger the fire after receive the command of “Start”
F	Ready signal is OFF when laser is firing
G	Job is completed
G~H	it will take about less than < 1 μ sec for the external device to receive a “Ready” signal from the laser marker
I	G-Mark marking software is closed
J	Power off

9.3 Laser Reaction Timing Diagram

◆ Start → Fire delaying time

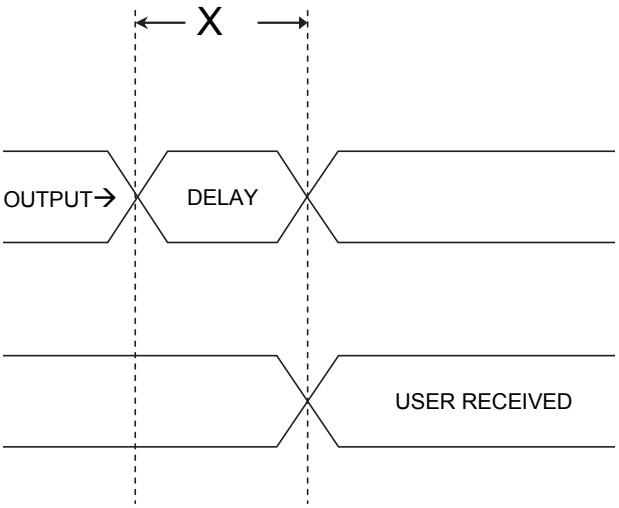
It will take about 0.1m sec <X< 50m sec to fire after receive the command of “Start”



0.1 m sec < X < 50 m sec

◆ Laser signal Output → External device delaying time

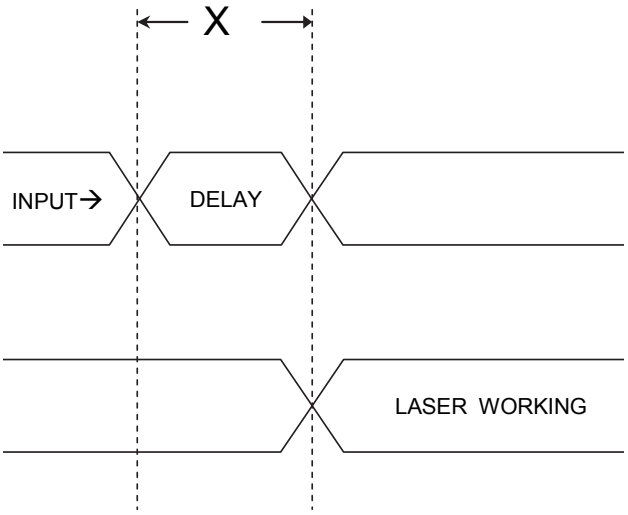
It will take about X < 1 μ sec for the external device to receive an output signal from the laser marker



X < 1 μ sec

◆ Laser signal Output → External device delaying time

It will take about 10 μ sec < X < 20 μ sec for the laser marker to receive an input signal from the external device



10 μ sec < X < 20 μ sec

Chapter 10

Basic Maintanence

Keeping your StellarMark IF-series clean and well maintained will ensure quality output, consistent reliability, and extended product life.
Smoke, dust or residue build-up inside the laser system or the mechanical components can cause a reduction in the laser power, reduced product life cycle, and a host of other avoidable problems.

WARNING

- Electrical shock may occur if you do not turn off and unplug the IF-40 before cleaning.
- Damage may occur to the system if you do not turn off and unplug the IF-series before cleaning.
- Always turn off and unplug the IF-40 before cleaning!

10.1 Regular spot check

Before each use, inspect the machine, the power and connector cables, and the working environment.
Look for frays in cables, proper connections, and any abnormalities that could have an effect on marking performance and/or user safety.
Be sure that the Stellar Mark™ is properly secured and mounted.

If a problem ever arises with the G-Mark Library™ software or the Stellar Mark™ marking machine, be sure to notify your distributor as soon as possible.

10.2 Cleaning the scan lens

Oil from hands and the residue that builds up on the scan lenses can distort the laser beam passing through, resulting in poor quality markings and may cause cracks by the uneven heat conduction.

To clean the scan lens, simply remove the scan lens and inspect it for light and heavy residue marks.

To clean light residue marks, apply some lens cleaner on each side of the lens. Use a new, lint free cloth to remove the lens cleaner. Make sure that the cloth only travels in one direction to prevent scratching the scan lens. Let the lens dry before reattaching it to the StellarMark™. Be sure to clean only one side at a time.

To clean a heavy residue mark, apply some lens cleaner on each side of the lens. Use a cotton swab to remove the caked on residue mark. Be careful not to scratch the lens. Use acetone if the lens cleaner will not remove the mark. After the mark is removed, follow the steps used to clean light residue marks in order to finish the cleaning.

WARNING

Acetone is an EXTREMELY FLAMMABLE LIQUID AND VAPOUR.
The vapour is heavier than air and may spread long distances making distant ignition and flashback possible.

NOTE

Never touch the scan lens with your bare hand. The oils from your hand will distort the laser beam passing through the lens. Use finger cots or rubber gloves when cleaning.